Index to A.S.M.E. Transactions

Volume 49-50, 1927-1928

NOTE: (D) denotes Discussion. Sections of Transactions are arranged alphabetically, the following symbols being used: Part I—AER (Aeronautics); APM (Applied Mechanics); FSP (Fuels and Steam Power). Part II—HYD (Hydraulics); IS (Iron and Steel); MAN (Management); MH (Materials Handling); MSP (Machine-Shop Practice); OGP (Oil and Gas Power); PET (Petroleum); PI (Printing Industries); RR (Railroads); TEX (Textiles); WDI (Wood Industries). Items in Index refer to section, volume, number of paper, and page. Thus MAN-50-4(5) refers to Management Section, vol. 50, paper no. 4, page 5.

A

ABBOTT, W. H. Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72

ABBOTT, W. L. The high cost of fuel saving (D), FSP-50-4

ABBOTT, W. R. The degree-day method of fuel-consumption analysis, PET-50-4

Abrasion in hydraulic ash handling, MH-50-12

Abrasive for polishing, MSP-50-6(72)
waste, MSP-50-6(72)

Accident prevention, RR-50-3
prevention at marine terminals, MH-50-11(7)
prevention, economics of, RR-50-3
reduction and materials handling, MH-50-3(8)

Accidents, cost of, RR-50-3

Accumulator, steam, Ruths, FSP-50-33

Administrative expense budget, MAN-50-5a(35)

Administration promotion vs. engineering promotion, RR-50-2(26)

Advertising and printing ink color standardization, PI-50-4(3-6)

Aeolian tone of wire in air flow, AER-50-4(15)

Aeration, definition of, FSP-50-46(218)

Aerial service, AER-50-1(4-5)
surveying, AER-50-1(5-6)
surveying, precision instruments for interpretation of maps, AER-50-1(6)
surveying, reduced cost of, by use of short-focal-length lens, AER-50-1(5)

"Aeroboard" for aircraft, AER-50-1(6)

Aerocartograph for measurement of aerial photomaps, AER-50-1(6)

Aerodynamic experiments, AER-50-4(15)

Aerodynamics, AER-50-1(4)
high-velocity air-jet tests, AER-50-2(6)
photographs of vortices, AER-50-4(15)
use of hot-wire detector, AER-50-4(15)
use of rotation to increase lift, AER-50-4(15)
windmill and propeller blade elements, AER-50-6(2)

Aerofoil—see airplane wing

Aeronautical activities of navy, AER-50-1(6-7)
engineering curricula, New York University, AER-50-2(1)
engineering curricula, Stanford University, AER-50-2(5)
laboratories at California Institute of Technology, AER-50-2(5)
laboratories at Massachusetts Institute of Technology, AER-50-2(3-4)
laboratories at New York University, AER-50-2(1)
laboratories at Stanford University, AER-50-2(4-5)
laboratories at University of Michigan, AER-50-2(6)
meteorology, AER-50-1(6)
museum, Massachusetts Institute of Technology, AER-50-2(4)
museum, New York University, AER-50-2(2)
research facilities at Massachusetts Institute of Technology, AER-50-2(2)

Aeronautics branch, Department of Commerce, AER-50-1(6)
data on wind tunnels at New York University, pictures, AER-50-2(1-2)
the oil engine and, AER-50-17

Agriculture, management in, MAN-50-1(5)

AHERN, GEORGE P. Our need for knowledge of tropical timbers (D), WDI-50-10
The need of research on tropical woods before marketing them (D), WDI-50-9

Ailerons, balanced, "Bristol Frise" type, AER-50-1(2)
differential control of, AER-50-1(2)
flapping of, accompanies wing flutter, AER-50-10(9)

Air and gas, measurement of flow with nozzles, APM-50-3
brake, research on, RR-50-1(4-5)
conditioning for lithography, PI-50-10(34)
constants, APM-50-3(5-6)
-cooled grate for domestic furnace, FSP-50-76(231)

Air filter, Owen's automatic, FSP-50-20(159)
fixation, FSP-50-27(11)
flow experiments, AER-50-4(15)
flow measurement with nozzles, APM-50-3
flow study by camera capable of 20,000 exposures per second, AER-50-1(4)
flow through slotted wings, AER-50-22
flow through windmill, AER-50-6(3)
heater, FSP-50-9(60-61)
heater vs. economizer, FSP-50-30(37)
lift, definition, FSP-50-46(218)
lift for oil, PET-50-1(1)
navigation, aids to, AER-50-14(54)
power preparedness, AER-50-2(7)
preheated, benefits of, FSP-50-70(167-170)
preheated, for domestic furnace, FSP-50-76 (231, 234-235, 236)
preheated, high-temperature, FSP-50-72 (195-196, 197)
preheated in tunnel kiln, FSP-50-56(45)
preheated, temperature of, FSP-50-16(124, 126, 128, 129, 143, 145); FSP-50-71(185)
preheater, FSP-50-41(188); FSP-50-78(254)
preheater and boiler efficiency, FSP-50-40 (167)
preheater and combustion rate, FSP-50-71 (182)
preheater calculations, FSP-50-16(130-132, 144, 146-147)
-preheater compared with economizer, FSP-50-16(143)
-preheater, development of, FSP-50-16 (123-124)
-preheater ducts expensive, FSP-50-16(141)
preheater, economic comparison of FSP-50-63(109-110)
-preheater economics, FSP-50-16(126-128)
-preheater economy based on return in investment, FSP-50-16(141)
preheater, effect of bypasses on, FSP-50-16 (145)
preheater, fans for, FSP-50-16(144-145)
-preheater fans similar to induced-draft fans, FSP-50-16(147)
preheater for high rating, FSP-50-16(124)
preheater for open-hearth furnace, IS-50-5(7)
preheater, fuel cost of, FSP-50-16(129)
preheater, gas temperature in, FSP-50-39 (142)
preheater increases boiler capacity, FSP-50-16(142)
preheater, plate, FSP-50-16(124, 129-131)
preheater progress, FSP-50-26(7)
preheater reduces combustible in ash, FSP-50-16(146)

Air (*continued*)
preheater, regenerative, FSP-50-16(124)
preheater, soot and corrosion in, FSP-50-16 (140)
preheater surface, determination of, FSP-50-16(127, 128)
preheater, tubular, FSP-50-16(124)
-preheater types, FSP-50-16(124-126)
preheater, use factor of, FSP-50-16(129)
preheater vs. economizer, FSP-50-34(101)
preheating, FSP-50-41(192)
-preheating limits, FSP-50-70(172)
pressure for testing typewriter, MAN-50-18
regulations, Department of Commerce, AER-50-1(6)
route map, transatlantic, AER-50-20(18)
routes in United States, AER-50-14(53)
routes, selection of, AER-50-14(53-54)
routes, total mileage and passengers in United States during first six months of 1927, AER-50-1(5)
temperature in furnace, FSP-50-34(99)
transport, AER-50-1(4-5)
-transport engineering, AER-50-14
-transport routes, statistics for six months ending June 30, 1927, AER-50-1(5)
-transport routes, World mileage statistics for 1926, AER-50-1(5)
transportation and railroads, RR-50-1(4)
transportation, economics, AER-50-27

Aircraft, balsa wood uses in, AER-50-28
cycloidal propulsion applied to, AER-50-12

Aircraft engine, engines (see also airplane engines)
engines, air-cooled Diesel, AER-50-17(67)
engines air-cooled, dependability and durability of, AER-50-17(66)
engine, air-cooled, section of, AER-50-7(1)
engines, air- vs. water-cooled, AER-50-17 (65-66)
engine, altitude test, OGP-50-5(12-13)
engines, aluminum alloy exhaust stacks for, AER-50-7(2)
engines, aluminum alloys for, AER-50-7
engine aluminum alloys, physical properties of, AER-50-7(3-6)
engine aluminum alloys, conductivity of, AER-50-7(4)
engine aluminum and magnesium alloys, AER-50-5(2)
engine bronzes and brasses, AER-50-5(1-2)
engine, cam, as efficient as crank type, AER-50-9(7)
engine, cam, counterbalance weights not needed in, AER-50-9(2)
engine, cam, cross-section of, AER-50-9(1)
engine, cam, curves for, AER-50-9(4)
engine, cam, design equations for, AER-50-9(4-6)
engine, cam, details of, AER-50-9(1-2)
engine, cam, economy of, AER-50-9(7)
engine, cam, flight tests of, AER-50-9(4)
engine, cam, wear in, AER-50-9(3-4)
engine, cam, weight of, AER-50-9(6)
engines classified, AER-50-15(57)
engines compared with automobile, AER-50-5(1)
engine connecting rods, steel for, AER-50-5(1)
engines, cost of, AER-50-17(66)
engine crankshafts, steel for, AER-50-5(1)
engines, Curtiss, AER-50-15(57)

Aircraft (*continued*)
engine cylinder-walls, factors affecting temperature of, AER-50-7(2)
engine, Diesel, OGP-50-9(30-31)
engines, Diesel vs. gasoline, AER-50-17(67)
engine fire hazard, AER-50-17(66-67)
engine fires, AER-50-17(67)
engine fuel economy, AER-50-17(65)
engines, fundamental requirements, AER-50-17(65)
engine gears, steel for, AER-50-5(1)
engine, heavy-oil, AER-50-23
engine, heavy-oil, disadvantages, AER-50-23 (45)
engines, mechanical efficiency of, AER-50-11(19-20)
engines, metallurgy of, AER-50-5
engines, objection to air-cooled, AER-50-17 (68)
engine, oil, at altitude, AER-50-23(47)
engine, oil, designs, AER-50-23
engine parts, quality control and inspection of, MSP-50-15
engine performance, AER-50-11(19-21)
engines, piston clearance of, AER-50-7(5)
engine piston ring materials, AER-50-7(6)
engines, reasons for use of aluminum alloys in, AER-50-7(3)
engines, sources of metals for, AER-50-4(2)
engines, steel for, AER-50-5(1)
engines, steel exhaust stacks for, AER-50-7(2)
engines, swirl-chamber stacks, AER-50-7(2)
engine temperatures, Air Corps tests of, AER-50-7(2)
engines, temperatures attained in, AER-50-7(1-2)
engine test apparatus, AER-50-11(21-22)
engines, torsional vibration of, AER-50-4(15)
engines, use of beryllium in, AER-50-4(2)
engines, use of S.A.E. materials, AER-50-5 (1)
engines with aluminum-bronze piston rings, AER-50-7(6)
engines with aluminum pistons, AER-50-7(2)
engine valve materials, AER-50-7(6)
engine valve seats, hardness of, AER-50-7(6)
engine valve temperatures, AER-50-7(2)
engine, water-cooled, section of, AER-50-7(1)
engine weight, AER-50-17(65)
engine with cam in place of crankshaft, AER-50-9(1)
fire hazard, AER-50-17(68)
glues used in, AER-50-16(61)
materials, AER-50-1(6)
naval, requirements for, AER-50-1(7)
oil engine, advantages, AER-50-17(66)
oil engine, economy of, AER-50-17(66)
oil engines, combustion in, AER-50-11
oleo gears for, AER-50-3
parts subjected to high temperatures, materials for, AER-50-7
propellers—see airplane propellers, cycloidal propellers
selection of, AER-50-14(54)
work, gluing wood in, AER-50-16
Airfoil—see airplane wing
Airline, commercial operation of, AER-50-24
personnel, AER-50-24(53-54)
pilot training, AER-50-24(54)
selection, AER-50-24(53)
test flying, AER-50-24(54)
weather research on, AER-50-24(54)
Airmail routes, mileage and traffic statistics for year ending June 30, 1927, AER-50-1(4)
Airplane, airplanes:
a short-range vehicle, AER-50-17(65)
autorotation phenomena, AER-50-2(6)
Barling bombing, AER-50-6(5)
beauty and luxury, AER-50-15(59)
brakes, AER-50-26(64)
business trip, most desirable length of, AER-50-27(68-69)
Airplane, airplanes (*continued*)
catapult launching of, AER-50-1(7)
catapults, AER-50-26(64)
commercial design of, AER-50-15(57)
commercial 5-seater, AER-50-1(2)
commercial utility of amphibian types, AER-50-1(2)
compared with airship, AER-50-4(1)
crashes, experimental, AER-50-17(68)
Daniel Guggenheim competition for safe design of, AER-50-1(4)
decrease of noise in, AER-50-1(2)
design and construction, AER-50-1(2 & 4)
design, correlation of wind-tunnel with full-flight results, AER-50-1(4)
design progress, AER-50-15(59)
earning ability, AER-50-27(72-73)
economics, long flights, AER-50-20
effect of decreasing fuel weight during flight, AER-50-21(25-27)
Airplane engine, engines—see also aircraft engine:
engines, AER-50-1(1-2)
engine, air-cooled type, AER-50-1(1)
engines, aluminum alloys for, AER-50-7(3-6)
engine, Bailey bull's eye, AER-50-1(2)
engine, cam—see aircraft engine, cam
engine, comparison of radial, v, and hex types, AER-50-1(1)
engine, Curtiss Hex-1640, AER-50-1(1)
engine, Curtiss 12-cylinder V, AER-50-1(1)
engine, Curtiss V-1550, AER-50-1(1, 3)
engine, Fairchild Caminez cam type, AER-50-1(2)
engine, Farman inversed 550–770 hp., AER-50-2(7)
engine, fuel tests of Fairchild-Caminez, AER-50-2(7)
engine, Kinney-Noble 5-cylinder, AER-50–1(2)
engine, Klamath 7-cylinder, AER-50-1(2)
engine laboratory, Massachusetts Institute of Technology, AER-50-2(3, 4)
engine, Liberty, AER-50-1(1)
engine, Packard 24-cylinder X, AER-50-1(1)
engine, Pratt & Whitney Hornet, AER-50-1 (1, 3, 7)
engine, Pratt & Whitney Wasp, AER-50-1 (1, 7)
engine, predominance of air-cooled, AER-50-1(1)
engine, radiation tests, AER-50-2(4)
engine, 7-cylinder radial, Aeronautical Industries, Inc., of Detroit, Mich., AER-50-1(2)
engines, tests on valve guides, AER-50-7(6)
engine, types used by Navy, AER-50-1(7)
engines, views of, AER-50-1(3)
engine, water-cooled type, AER-50-1(1)
engine with hydraulic valve gear, AER-50-1 (2)
engine, Wright Cyclone, AER-50-1(1, 7)
engine, Wright R-1750 views, AER-50-1(3)
engine, Wright V-1460, AER-50-1(1)
engine, Wright Whirlwind, AER-50-1(1, 7)
Fairchild FC-2 monoplane data, AER-50-1 (2)
fare determination, AER-50-27
fare as justified by speed, AER-50-27(70)
Focke-Wulf "Ente," AER-50-1(4)
fuel consumption, AER-50-21(24)
hydraulic wheel brakes for, AER-50-1(2)
ideal range of, AER-50-27(69-70)
independent wheel brakes for, AER-50-1 (2)
inspection, Department of Commerce, AER-50-1(6)
landing gears, calculation of metering pins for oleo type, AER-50-3(5)
landing gears, calculation of tire effect on, AER-50-3(11)
landing gears, combined with wheel brake, AER-50-3(8)
Airplane, airplanes (*continued*)
landing gears, Curtiss oleo-rubber, data and views, AER-50-3(2)
landing gears, discussion of indicator diagrams of, AER-50-3(7-8)
landing gears, drop test of, AER-50-3(5-7)
landing gears, dynamic tests of, AER-50-3(4)
landing gears, early types, AER-50-3(1)
landing gears, for light commercial planes, formulas and experiments, AER-50-3(10)
landing gears, Keystone oleo-spring, data and views, AER-50-3(3)
landing gears, load-deflection curves, static and dynamic, AER-50-3(4)
landing gears, maintenance instructions, AER-50-3(8-10)
landing gears, mechanical, AER-50-3(8)
landing gears, modern types, AER-50-3(1-2)
landing gears, oleo, effect of viscosity on, AER-50-3(6-7)
landing gears, oleo-gravity, AER-50-3(3)
landing gears, oleo-pneumatic, AER-50-3(2)
landing gears, oleo-spring, AER-50-3(2-3)
landing gears, principles of design, AER-50-3 (8)
landing gears, straight and divided axle types, AER-50-3(1)
landing gears, theory and calculations, AER 50-3(4-6)
landing gears, Vickers oleo-pneumatic, AER-50-3(1)
landing speeds, AER-50-15(58); AER-50-21 (22)
large, AER-50-20
launching gear, AER-50-26
lift and drag coefficients, AER-50-21
limitations, AER-50-20
long-distance-flight theory, AER-50-21
metal construction of, AER-50-1(2)
monoplane vs. biplane, AER-50-15(57)
multi-engined, Daniel Guggenheim fund loans for, AER-50-1(2)
Navy types of, AER-50-1(7)
oleo landing gear for, AER-50-1(2)
parts, high rejection of, AER-50-15(59)
parts, interchangeability of, AER-50-15(59)
performance curves, AER-50-15(58)
pilot training, AER-50-24(54)
plywood in, WDI-50-13(4)
power, effect of, on speed, earning ability, general operation, AER-50-27(73)
production problems, AER-50-15(58-59)
propeller, centrifugal force, AER-50-25(55)
propeller, cycloidal—see cycloidal propeller
propeller design from air flow around bullet studies, AER-50-25(56)
propeller, detachable-blade, AER-50-25(58-59)
propeller efficiency, AER-50-25(55-56)
propeller, metal, AER-50-25
propeller, metal, heat treatment, AER-50-25 (59, 61)
propeller metal, manufacture of, AER-50-25 (61-62)
propeller, metal, pitch-changing machine for, AER-50-25(61)
propeller, metal, tests and design, AER-50-25(59-61)
propeller, metal, types, AER-50-25(57-59)
propeller, micarta, AER-50-25(55)
propeller, pitch of, AER-50-25(55)
propeller, Reed metal, AER-50-25
propeller size and weight, AER-50-25(55)
propeller, stress analysis, AER-50-25(59-61)
propeller, tandem, AER-50-25(58)
propeller tests, AER-50-2(3, 4)
propeller theory, AER-50-25(56)
propeller, useful thrust, AER-50-25(55)
propeller, wind-tunnel test, AER-50-25(61)
pusher-screw vs. tractor-screw, AER-50-1(2)
rapid production of, AER-50-15(58)
reduction gears in, AER-50-17(66)

Airplane, airplanes (*continued*)
rib-testing machine at New York University, data and picture, AER-50-2(2)
small, development of, AER-50-15(57-58)
small commercial 3-seater types, AER-50-1 (2)
speed at minimum drag, AER-50-21(21-22)
speed, economic value of, AER-50-27(67-68)
speed records, AER-50-1(2, 4)
split-axle landing gears for, AER-50-15(58)
stabilizer, "Bungee" system in Loening amphibians, AER-50-1(2)
structural laboratories, AER-50-2(4, 6)
sustained by idling cycloidal propellers, AER-50-12(42)
useful load, AER-50-21(25)
vs. airship, AER-50-19(5); AER-50-20
"Waco" biplane, data, AER-50-1(2)
weight reduction, AER-50-15(59)
wheel brakes, AER-50-15(59)
wing, aeolian tone of, AER-50-4(15)
wing bending induced by torsion, AER-50-10 (12)
wing, best slot position, AER-50-22(43)
wing, constant pressure, AER-50-1(4)
wing, effect of interference on efficiency of, AER-50-6(4)
wing failure due to combined bending and torsion, AER-50-10(11)
wing flutter, aerodynamic considerations, AER-50-10(11-13)
wing flutter, investigation of, AER-50-1(4)
wing flutter, literature, AER-50-10(13-14)
wing flutter, prevention of, AER-50-10(14)
wing, lift and moment curves, AER-50-10(10)
wing, lift coefficients, AER-50-6(3)
wing, multi slotted, AER-50-22(43)
wing, removal of boundary layer from, by suction, AER-50-1(4)
wing, sand test of, at New York University, AER-50-2(2)
wing, slot mechanisms, AER-50-22(34-41)
wing slot should open at stalling speed, AER-50-22(33)
wing slotted for part of span, AER-50-22(35)
wing, slotted, rolling and yawing moment coefficients, AER-50-22(38, 39, 40, 41)
wing, slotted, stability of, AER-50-22
wing, venting of slots in, AER-50-22(35, 38)
wing, slotted, forces on, AER-50-22
wing slotted, wind-tunnel tests and results, AER-50-22(39-41)
wing, slotted, with interceptor, AER-50-22 (42)
wing, wind-tunnel reproduction of flutter of, AER-50-1(4)
with cabins, AER-50-15(57)
with horizontal tail surfaces ahead of wing, AER-50-1(4)
with slotted wings, AER-50-22
world mileage for 1926, AER-50-1(5)
administration building of Buffalo, AER-50-8 (6-8)

Airport, airports:
at Chicago, AER-50-14(53)
automotive equipment for, AER-50-8(6)
avoiding fog at, AER-50-8(1)
Buffalo, AER-50-8(2-4; views, 7, 8)
concrete runways for, AER-50-8(8)
construction important, AER-50-8(1)
construction must look to the future, AER-50-8(1)
Croydon, AER-50-8(1)
drainage, AER-50-8(2-4); AER-50-26(64)
drainage of Buffalo, AER-50-8(3-4)
equipment, AER-50-14(54)
fire apparatus, AER-50-8(6); AER-50-14 (54)
hangars for, AER-50-8(4, 5-6)
inaccessibility, AER-50-27(68, 70-71)
increasing number of, AER-50-1(1)
land needed for, AER-50-8(1)
landing surfaces, AER-50-26(64)

Airport, airports (*continued*)
large enough to permit full-load take off, AER-50-26(63)
modern, AER-50-26
natural gas at Buffalo, AER-50-8(5)
needs rail transportation, AER-50-8(2)
planning, AER-50-26
planning of Buffalo, AER-50-8(1-2)
plumbing for, AER-50-8(4)
power lines for, AER-50-8(5)
runways vs. sod for, AER-50-8(3)
runways needed for, AER-50-8(1)
size and surroundings, AER-50-8(1)
soil characteristics, AER-50-8(2)

Airship, airships:
a long-range vehicle, AER-50-17(65)
aerodynamic load, AER-50-4(3)
aerostatic and dynamic lift of, AER-50-4(1)
aerostatic load, AER-50-4(3)
assumptions for design of, AER-50-4(4)
bending-strength distribution in, AER-50-4 (3)
Bodensee, inside view of, AER-50-4(5)
carriage of airplanes in, AER-50-4(7)
commercial operation of, AER-50-4(4)
compared with airplane, AER-50-4
comparison of commercial and war, AER-50-4(4)
constant inspection of, AER-50-4(1)
construction in England, AER-50-1(7)
construction in Germany, AER-50-1(7)
construction in United States, AER-50-1(7)
cost of production of, AER-50-4(12-14)
curves for effect of parts on weight of, AER-50-4(9-11)
danger from gusts, AER-50-4(2)
data on various small sizes, AER-50-4(5-8)
design details, AER-50-19(6-8)
development of large commercial rigid, AER-50-4
economics, long flights, AER-50-20
effect of control car and crew on weight of, AER-50-4(10)
effect of corridors on, AER-50-4(10)
effect of fabric parts on weight of, AER-50-4 (10)
effect of intermediate rings on weight of, AER-50-4(9)
effect of longitudinal girders on weight of, AER-50-4(8)
effect of main rings on weight, AER-50-4(9)
effect of power plant on weight of, AER-50-4 (10-11)
effect of structural features on weight of, AER-50-4(8)
effect of weather on speed, AER-50-4(2)
effect of wiring on weight of, AER-50-4(9)
efficiency, formulas for, AER-50-4(12)
Europe ahead in construction of, AER-50-19 (5)
fireproofing of, AER-50-4(2)
flight characteristics of thin and fat types, AER-50-4(5)
general types of, AER-50-4(5-6)
Goodyear Zeppelin project, AER-50-4(7-8)
government subsidy, AER-50-20(20)
hangars designed to facilitate handling of ship, AER-50-4(13)
hangars, wind pressure on, AER-50-4(13)
hangars, wind-tunnel tests on, AER-50-4(13)
helium inflation, AER-50-4(2); AER-50-20 (15-16)
hull structure of, AER-50-4(4, 6-8)
hydrogen fire hazard, AER-50-4(2)
hydrogen or helium for, AER-50-19(6-8)
inside view of small-size type, AER-50-4(5)
Kirsten cycloidal propeller for, AER-50-20 (19-20)
landing of, AER-50-20(20)
large commercial rigid, development of, AER-50-4
load factor of, AER-50-4(3)

Airship, airships (*continued*)
load factor of bare metallic framework, AER-50-4(3)
materials, labor, and production methods, AER-50-4(14)
method of erection of, AER-50-4(13)
mooring and landing equipment, AER-50-4 (10)
multiplicity of buoyancy units, AER-50-4(1)
multiplicity of propulsive means, AER-50-4 (1)
multiplicity of safety means, AER-50-4(1)
necessity of well trimmed flight in storms, AER-50-4(2)
needs capital, AER-50-20(15)
of 1927, AER-50-1(7)
oil engines for, AER-50-23
optimum apportionment of fuel and pay loads in, AER-50-4(11)
optimum size of greater than largest contemplated, AER-50-4(12)
passenger accommodations in, AER-50-4(7)
passengers, curve for determination of number of, AER-50-4(12)
performance a function of size, AER-50-4 (11-12)
principal dangers in, AER-50-4(2)
principles of design of, AER-50-4(4-8)
production in Europe, AER-50-19(5-6)
propeller efficiency of, AER-50-4(12)
ratio total load to useful load, AER-50-4(11)
recommended hangars for, AER-50-4(12-14)
relative costs of, AER-50-4(13-14)
safety, AER-50-20(17)
safety and reliability of, AER-50-4(1)
safety of, compared with steel buildings, AER-50-4(4)
safety of hydrogen in, AER-50-19(8)
size of, AER-50-19(5-6)
speed, AER-50-4(2)
status of, in America, AER-50-19
stresses in longitudinal girders of, AER-50-4(9)
stresses in intermediate rings of, AER-50-4(9)
stresses in main rings of, AER-50-4(9)
structural details, AER-50-4(1)
structural failures few, AER-50-20(14)
suited to transatlantic flying, AER-50-20
transportational efficiency, AER-50-4(2, 12)
transverse frames of, AER-50-4(6-7)
triple-layer principle of hull, AER-50-4(1)
types, AER-50-19(5-6)
Upson pressure-rigid, AER-50-19(6, 8)
variation of unit weight of hull, AER-50-4(8)
vs. airplane, AER-50-19(5); AER-50-20
weight compensation for fuel consumption, AER-50-4(7-8)
weight of empennage of, AER-50-4(10)
weight per passenger of, AER-50-4(11)
wind force on, when moored at mast, AER-50-4(2)

Airway, airways:
beacon, control of, by astronomic clocks, AER-50-1(6)
beacon, improved 24-in. rotating, AER-50-1 (6)
beacon, showing from horizon to zenith, AER-50-1(6)
development of, AER-50-14(54-55)
division, Department of Commerce, AER-50-13(49)
economy of net of weather stations for, AER-50-13(50)
frequency of weather reports on, AER-50-13 (50)
improvement of apparatus for, AER-50-1(6)
lighted wind cones for, AER-50-1(6)
lighting facilities on, AER-50-1(6)
location of, AER-50-1(6)
meteorological service for commercial, AER-50-13

Airway, airways (*continued*)
performance records, AER-50-14(55)
radio beacons for, AER-50-1(6)
schedules for, AER-50-14(55)
structures, numbering of, AER-50-1(6)
AISENSTEIN, MICHAEL D. A new method of separating the hydraulic losses in a centrifugal pump, HYD-50-2
Friction in dredge pipes (D), HYD-50-7
Notes on "A new method of separating the hydraulic losses in a centrifugal pump," HYD-50-6
"Alclad" for aircraft, AER-50-1(6)
ALDEN, C. R. Manufacture of Diesel fuel injectors, OGP-50-7
ALDEN, V. E. Some factors in furnace design for high capacity (D), FSP-50-78
ALDRIN, EDWIN E. Oleo gears for aircraft, AER-50-3
Algae, definition, FSP-50-46(218)
Alkali water, definition, FSP-50-46(218)
ALLCUT, E. A. Efficiencies of Otto and Diesel engines (D), OGP-50-5
Allegheny metal, IS-50-4(1, 2)
ALLEN, D. H. The need of research on tropical woods before marketing them (D), WDI-50-9
ALLEN, O. F. The diesel engine and public utilities (D), OGP-50-14
Diesel-fuel-oil specifications (D), OGP-50-10
European Diesel-engine developments, OGP-50-8
Alloy steels under various heat treatments and at elevated temperatures, physical properties of, IS-50-4
ALMERT, HAROLD. Problems and methods in smoke-abatement work (D), FSP-50-77
Smokeless and efficient firing of domestic furnaces—Part II (D), FSP-50-76
Alternating-current motor—see also under induction motor
-current motor characteristics, WDI-50-2 (2)
-current motors for woodworking, WDI-50-2
-current motors, increasing the production of woodworking machines by use of direct-connected, WDI-50-2
Altitude record, Pratt & Whitney wasp engine, AER-50-1(1)
record, seaplane, AER-50-1(1)
Alum, definition, FSP-50-46(218)
Aluminum alloys, casting methods, AER-50-7 (3-4)
alloys, coefficient of expansion, AER-50-7(4)
alloys, conductivity of, AER-50-7(4)
alloys, effect of variation of composition on, AER-50-7(3-6)
alloys for aircraft engines, physical properties of, AER-50-7(3-6)
alloys, heat conductivity of, IS-50-8(36)
alloys, heat treatment for, AER-50-7(3-6)
alloys, properties of, AER-50-7(3-6)
alloys, specific heat of, AER-50-7(6)
alloys too soft for valve seats, AER-50-7(6)
bearing, seizing of, on steel shaft, IS-50-8(37)
bronze for valve seats, AER-50-7(6)
casting alloys, bibliography of high-temperature tests, IS-50-8(29, 32)
casting alloys, composition, IS-50-8(26)
casting alloys, fractures, IS-50-8(29)
casting alloys, heat treatment, IS-50-8(29)
casting alloys, heating-equipment design for high-temperature tests, IS-50-8(32-36)
casting alloys, high-temperature test data, IS-50-8(27-31)
casting alloys, modulus of elasticity at various temperatures, IS-50-8(28)
casting alloys, properties at elevated temperatures, IS-50-8
casting alloys, short-time vs. long-time tensile tests, IS-50-8(29)
Aluminum (*continued*)
Company of America, developer of "alclad" for aircraft, AER-50-1(6)
compared with steel for aircraft engines, AER-50-5(1)
for Diesel pistons, OGP-50-1(3)
-iron affinity, IS-50-8(37)
pistons for aircraft engines, AER-50-7(2)
American fuel resources, FSP-50-2
American Gas Association recommendations for metering, APM-50-3(15)
American Society of Mechanical Engineers as means of graduate study, MAN-50-11(7)
A.S.M.E. Boiler Code, FSP-50-32(61)
AMMERMAN, K. J. The motor truck and L. C. L. freight (D), RR-50-7
Ammonium-sulphate economics, FSP-50-27(11)
sulphate situation, FSP-50-27(16)
Analysis as applied to the selection of type and size of power-plant equipment, engineering, FSP-50-42
ANDERSON, HELMER N. Pumping problems in paper mills, PI-50-1
ANDERSON, JOHN. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
High-pressure steam at Edgar station (D), FSP-50-30
High-pressure steam boilers (D), FSP-50-32
High-pressure steam boilers (D), FSP-50-32
Progress in central-station use of pulverized coal (D), FSP-50-71
Some economic factors in power-station design (D), FSP-50-4
ANDREW, LOWELL R. Damage due to smoke (D), FSP-50-75
The measurement of atmospheric pollution, visible and invisible (D), FSP-50-20
ANDRUS, C. A. Meteorological service for commercial airways (D), AER-50-13(52)
Anemometer calibration, AER-50-6(13)
Anthracite, FSP-50-2
vs. coke, FSP-50-28(26)
Antimony-tin-copper system, MSP-50-11(13)
Apartment-house smoke nuisance, FSP-50-21 (169)
Apprentice, apprentices:
instructor, MAN-50-14(5, 7)
number needed, MAN-50-14(4-5)
railroad—see railroad apprentices
school work for, MAN-50-14(2-3)
supervisor, MAN-50-14(2, 4)
training, MAN-50-14
training at Brown and Sharpe, MAN-50-14 (6)
training, cost of, MAN-50-14(3)
training, curriculum should be definite, MAN-50-14(5)
training executive committee, MAN-50-14 (1,4)
training, school curriculum for, MAN-50-14 (5-6)
training, state aid for, MAN-50-14(1)
turnover, MAN-50-14(3-4)
Arch-dam, Stevenson, investigation, HYD-50-1(4)
ARCHER, DAVID M. Boiler-furnace refractories (D), FSP-50-64
Arc-welded pipe line, FSP-50-47
welding progress, MSP-50-1(3)
ARDUSER, L. P. Control of quality (D), MAN-50-7
Armature bearings, waste-packed, investigation of performance of, APM-50-1
ARMSTRONG, C. G. Fuels, past and prospective (D), FSP-50-1
Army dredge *Dan C. Kingman*, vibration of, APM-50-8(25, 28-30, 46, 59)
ARNOLD, R. E. The use of fuels in brick kilns (D), FSP-50-11
ARNOTT, DAVID. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
ARNSTEIN, KARL. The development of large commercial rigid airships, AER-50-4
The status of the airship in America (D), AER-50-19
Ascoloy, IS-50-4(1)
Ash, combustible in, and preheated-air temperature, FSP-50-72(196)
disposal, FSP-50-71(182); MH-50-12(15, 16)
fused, market value of, FSP-50-78(279).
fusibility, FSP-50-52(20)
fusion, FSP-50-41(192)
fusion point, FSP-50-78(253-270)
fusion point and slag, FSP-50-66(139)
fusion temperature, FSP-50-71(185)
handled as molten slag, MH-50-12(15)
handling for pulverized coal, MH-50-12 (14-15)
handling, hydraulic, MH-50-12
handling, hydraulic, repairs to system, MH-50-12(16)
handling, hydraulic, water circulation in, MH-50-12(16)
removal, FSP-50-66(139); FSP-50-78(260, 266-267, 276, 277-280, 283)
removal in molten state, FSP-50-10(66, 76); FSP-50-72(194); FSP-50-78(260, 267, 276, 279, 283)
removal, pulverized coal, FSP-50-72(194)
should not fuse in furnace, FSP-50-78(273)
travels like sand, MH-50-12(16)
Atmospheric acidity measurement, FSP-50-20 (159-160)
ASHLEY, GEORGE H. Constitution and classification of coal (D), FSP-50-51
ASHMAN, G. H. A materials-handling and transport organization (D), MH-50-8
Plant maintenance, MSP-50-3
Ashpit depth, FSP-50-70(174)
loss with stokers, FSP-50-65
Atmospheric germ measurement, FSP-50-20(160)
pollution—see also smoke abatement
pollution measurement, FSP-50-20
pollution tests, FSP-50-20(161)
pollution in woodworking city, FSP-50-75 (219)
smoke pollution, FSP-50-24
ATTENDU, A. C. The problem of solid fuel injection in high-speed flexible oil engines, AER-50-18
Autofrettage, IS-50-3(7, 8-9)
Automobile manufacturing and wage payment methods, MAN-50-16
mass production in Europe, MAN-50-1(1)
painting, MAN-50-16(13-14)
Automotive construction, plywood in, WDI-50-13 (4)
Auxiliary power for power station, FSP-50-40 (166)
Aviation, civil, valuable as preparation for war, AER-50-2(7)
commercial, economics of, AER-50-27
impeded by surplus war planes, AER-50-15 (57)
preparedness in, AER-50-2(7)
AZBE, VICTOR J. Smokeless and efficient firing of domestic furnaces, FSP-50-23
Damage due to smoke (D), FSP-50-75
Problems and methods in smoke-abatement work (D), FSP-50-77
Progress toward direct firing of boilers with producer gas (D), FSP-50-54
Smokeless and efficient firing of domestic furnaces—part II, FSP-50-76

B

Back pressure and cut-off adjustment for the locomotive, RR-50-5
pressure regulator, RR-50-5(16, 18)
Backed-up rolling mill, IS-50-2(4-5)
BADGER, W. L. Evaporators for boiler-feed make-up water, FSP-50-45

Baffle arrangements, velocities and areas, FSP-50-57(56, 57, 60)
cross, advantages and installation, FSP-50-57
cross, compared with standard baffle, FSP-50-57(55-60)
cross, and rapid steam raising, FSP-50-57(62)
cross, and dust pockets, FSP-50-57(56)
cross, and superheater, FSP-50-57(59-60)
cross, efficiency may be due to moist steam, FSP-50-57(62, 63)
cross, flexibility of, FSP-50-57(61)
cross, heat transfer, FSP-50-57(62)
down-draft, for domestic furnace, FSP-50-76 (226-233)
in vertical boilers—see under baffle, cross
made of calite E, FSP-50-76(227)
restriction due to, FSP-50-57(51, 53)
Bach, George W. Problems and methods in smoke-abatement work (D), FSP-50-77
baffling of boilers, FSP-50-41(186-187)
of vertical boilers, FSP-50-57
Bagasse, furnace for, WDI-50-16B(34)
Bailey, A. D. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station, FSP-50-10
High steam pressure and temperature at Crawford Avenue station, FSP-50-31
High-pressure steam at Edgar station (D), FSP-50-30
High-pressure steam boilers (D), FSP-50-32
The characteristics of modern boilers (D), FSP-50-9
Bailey, E. G. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
Present status of furnace and burner design for the use of pulverized fuel, FSP-50-72
Some factors in furnace design for high capacity, FSP-50-78
Some fundamental considerations in the design of boiler furnaces (D), FSP-50-39
Bailey, W. F. Control of quality (D), MAN-50-7
Baker, John B. Efficiencies of Otto and Diesel engines (D), OGP-50-5
Baldwin, M. D. Automatic production of small wood parts (D), WDI-50-15
Efficiency methods and standards in the German woodworking industries (D), WDI-50-14
Ballantine, N. D. The motor truck and L. C. L. freight (D), RR-50-7
Ball-bearing machine-tool spindles, MSP-50-10
Balsa wood—see wood, balsa
Balsam wool, AER-50-28(76)
Banking of domestic furnace, FSP-50-23(180-182)
Bank savings, United States, MAN-50-1(1)
Barba, Charles E. Car retarders, a recent development in railway-yard operation (D), RR-50-12
Bardwell, R. C. Present tendency of boiler-water conditioning (D), FSP-50-58
Barish, Thomas. Ball-bearing machine-tool spindles, MSP-50-10
Barnes, Joseph F. Systems of workman payment in porcelain factories (D), MAN-50-12
Barrett, D. O. Manufacture of Diesel fuel injectors (D), OGP-50-7
Bato, Andrew A. Stresses and reactions in expansion pipe bends (D), FSP-50-49
The Ruths steam accumulator (D), FSP-50-33
Baxter, B. M. Wood-burning furnaces (D), WDI-50-16B
Bayntun, Robert S. The Ruths steam accumulator (D), FSP-50-33
Beal, H. S. Shop-equipment policies in representative plants, MSP-50-7
Bean, H. S. Measurement of flow of air and gas with nozzles (D), APM-50-3
Bearce, George D. Coordinating wage incentives and production control (D), MAN-50-3
Pulp-grinder control reduces paper costs (D), PI-50-2
Beardsley, Edward G. The study of oil sprays for fuel-injection engines by means of high-speed motion pictures, OGP-50-3
Bearing, bearings:
anti-friction—see also bearings, ball; bearings, roller
anti-friction, for machine tools, MSP-50-1 (2); MSP-50-2(5, 9, 11, 14); MSP-50-3 (27, 29); MSP-50-5(62, 65); MSP-50-8
anti-friction, for railroads, RR-50-1(4)
anti-friction for rolling mills, IS-50-2(4-5)
anti-friction, in materials-handling equipment, MH-50-9(24)
anti-friction, in oil motor, MSP-50-4(36)
anti-friction, in polishing machine, MSP-50-6 (75)
anti-friction, in road-building equipment, MH-50-1(5)
anti-friction, in rolling mill, IS-50-1(1); IS-50-2(1-3); IS-50-11(26, 27)
anti-friction, rigidity of, MSP-50-8
anti-friction, skidding of, MSP-50-8(88)
anti-friction, use of nickel steel in, IS-50-6(14)
armature, waste-packed forces on, APM-50-1 (1-2)
ball—see also bearings, anti-friction
ball, equalizing load distribution, MSP-50-10 (6)
ball, failure in conveyor service, MH-50-2(3)
ball, for Meyer governor, PI-50-2(10)
ball, made with true running surfaces, MSP-50-10(6)
ball, matched, MSP-50-10(5)
ball, mounted back to back with small initial load, MSP-50-10(5-6)
ball, rating, MSP-50-10(8)
ball, removal of play in, MSP-50-10(8)
ball, size and location, MSP-50-10(8)
ball, strain distribution, MSP-50-10(8)
cannot be packed too tight, APM-50-1(4)
centrifugal-pump, HYD-50-4(6)
critical oil lift in, APM-50-1(5)
effect of grooving, APM-50-1(8-9)
failure, MSP-50-3(29)
failures, railway motor, APM-50-1(1)
grooved vs. grooveless, APM-50-1(8-9)
high-speed, oil-well machinery, PET-50-1(2)
journal, lubrication of, APM-50-4(1)
load diagram, APM-50-1(1)
machine-tool, anti-friction, recent developments in application of, MSP-50-8
metals, compression test compared with Brinell, MSP-50-11(24)
metals, compression tests, MSP-50-11(20)
metals, effect of impurities on tin in, MSP-50-11(25)
metals, effect of rapid cooling, MSP-50-11 (15)
metals, hardness at elevated temperatures, MSP-50-11(19-23)
metals, hardness compared with composition, MSP-50-11(19)
metals, high-lead, MSP-50-11(28)
metals influenced by lead, MSP-50-11(24-25)
metals, microstructure of, MSP-50-11(15-26)
metals, physical properties, MSP-50-11 (20-27)
metals, space model of hardness, MSP-50-11 (23)
metals, superficial appearance after compression, MSP-50-11(24)
metals, tin-base, cooling of, MSP-50-10 (14-15)
metals, tin-base, microstructure, MSP-50-11 (15-19, 26)
metals, tin-base, references, MSP-50-11(13)
metals, tin-base, study of, MSP-50-11
Bearing, bearings (*continued*)
motor compared with car-journal, APM-50-1(10)
motor, types of oil for, APM-50-1(5)
motor, types of waste for, APM-50-1(4)
oil film in waste-packed, APM-50-1(2-3)
oil flow and temperatures in, APM-50-1 (5-8)
packing and oiling of, APM-50-1(3-4)
pour testing of oil for, APM-50-1(10)
ring-oiled, HYD-50-4(6)
rubber, in hydraulic machinery, HYD-50-1(3)
roller—see also bearing, anti-friction
roller, for loom, tests of, TEX-50-3
starting difficulties, APM-50-1(7)
temperatures of, APM-50-1(8-9)
test equipment, APM-50-1(2)
vacuum zone in oil film vulnerable, APM-50-1(3)
Beatty, A. J. Training minor executives in a rapidly growing organization, MAN-50-11
Beatty, John D. Training minor executives in a rapidly growing organization (D), MAN-50-11
Beck, C. E. Manufacture of Diesel fuel injectors (D), OGP-50-7
The Diesel engine and public utilities (D), OGP-50-14
Bedaux system disadvantages, MAN-50-8(54-55)
system of measuring human effort, MAN-50-8
Beebee, A. M. Economics of dry-quenching coke by the Sulzer process, FSP-50-17
Beers, L. Boiler-furnace refractories (D), FSP-50-64
Beers, R. L. Stoker advantages and disadvantages (D), FSP-50-65
Belt drive vs. motor drive, MSP-50-2(7)
Bénard vortices, AER-50-4(15)
Bend elongation test, APM-50-12(14, 23)
Bennett, Joseph S. Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
and Worker, Joseph G. Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
Benzol, FSP-50-27(11)
and gasoline, FSP-50-27(15)
Bergius process, coal distillation, PET-50-1(9)
process of coal liquefaction, FSP-50-25(4)
Bernard, H. B. Progress of the natural-gasoline industry for 1926–27, PET-50-1
Beryllium for aircraft engines, AER-50-5(2)
Betancourt, Gilbert. The status of the airship in America, AER-50-19
Beury, William. The preparation of coal with special reference to quality, FSP-50-18
Beyer, D. S. Cargo cranes—types available, factors governing selection, and latest developments, (D) MH-50-5
Bibliography on factory wastes, FSP-50-46
Bigelow, Charles H. The hydraulic handling of ashes (D), MH-50-12
Materials handling as an aid to production (D), MH-50-4
Modern handling methods of railroad transportation (D), MH-50-13
Operating costs of electric industrial trucks and tractors (D), MH-50-3
Budgetary control (D), MAN-50-5b
Lacquer and varnish films (D), WDI-50-4
Bilhuber, Paul H. Change in moisture content of lumber during rail shipment (D), WDI-50-8
Compressive tests of balsa wood (D), WDI-50-12
Efficiency methods and standards in German woodworking industries (D), WDI-50-14
Improvements in handling methods in the woodworking industry (D), WDI-50-5
Wood-burning furnaces (D), WDI-50-16B

Biplane, "Waco," data, AER-50-1(2)
Bird flight applied to aeronautics, AER-50-12
Birnie's formula, IS-50-3(2, 4, 7, 10)
Bituminous coal production, FSP-50-25(1)
coal situation, FSP-50-25(1)
BLANCHARD, E. P. The economics of machine-tool replacement (D), MSP-50-5
Blast furnace and coke, FSP-50-27(10)
-furnace gas and pulverized coal, combination firing of, FSP-50-35
-furnace gas, dust precipitator for, FSP-50-35(106)
-furnace gas fired together with pulverized coal, FSP-50-35
BLAUVELT, WILLIAM H. The K.S.G. process of low-temperature carbonization, FSP-50-28
BLEWETT, J. B. Systems of workman payment in porcelain factories (D), MAN-50-12
BLISS, P. E. The development of machine tools from a user's viewpoint (D), MSP-50-2
BLIZARD, JOHN. Burning characteristics of different coals (D), FSP-50-52
Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Unit system of coal pulverizers for the generation of steam, FSP-50-61
Blowdown, automatic continuous, FSP-50-46 (216)
continuous, FSP-50-46(215-217)
continuous, corrosion in, FSP-50-46 (217)
Blowoff, definition, FSP-50-46(218)
BODWELL, H. L. Sheet rolling (D), IS-50-9
Boiler, boilers:
advantages of large, FSP-50-34(83-84)
and auxiliaries, progress in, FSP-50-26(7-8)
automatic control, FSP-50-70(174)
auxiliaries, corrosion elimination in, FSP-50-58
auxiliaries, high pressure, X-ray test of, FSP-50-30(33)
auxiliary drive, turbine, FSP-50-16(147)
auxiliary drives, FSP-50-16(123, 134)
auxiliary power, FSP-50-40(176)
baffling—see baffling
Benson, FSP-50-30(38-39); FSP-50-32 (62-63)
blowdown, continuous, FSP-50-46(215-217)
Calumet station, FSP-50-31(43)
capacity and flame temperature, FSP-50-39 (148)
capacity increased by air-preheater, FSP-50-16(142)
capacity, increase in, FSP-50-32(50-51)
car-heating, for electric locomotive, RR-50-6 (23)
care of, A.S.M.E. rules for, FSP-50-58(72)
characteristics of modern, FSP-50-9
circulation, FSP-50-32(48-49)
cleanliness, FSP-50-32(64)
code, A.S.M.E., FSP-50-32(61)
code, A.S.M.E., and technical worth of steel, APM-50-12(17)
combustion speed, FSP-50-38(136)
compound, definition, FSP-50-46(218)
construction of, high-pressure, FSP-50-9 (59-60)
continuous operation due to modern improvements, FSP-50-40(171-172)
corrosion, FSP-50-32(64); FSP-50-46(222-223)
corrosion and deaeration, FSP-50-41(188)
corrosion inhibition, FSP-50-58(67)
corrosion prevented electrolytically, FSP-50-46(229)
-corrosion problems, FSP-50-46
corrosion resistance from nickel steel, IS-50-6(12)
critical-pressure, RR-50-8(46-47)
Boiler, boilers (*continued*)
cross-baffled, tests of, FSP-50-57(54-60)
cross-drum, FSP-50-26(7)
data on modern, FSP-50-32(48)
deconcentrator, FSP-50-46(215-217)
definition, FSP-50-46(218)
disadvantages of large, FSP-50-34(84)
draft losses in, FSP-50-34(88)
draft needed, FSP-50-9(60-61)
drum, rear, protection of, FSP-50-57(53, 57, 63)
drum, welded and forged types, FSP-50-32 (57)
efficiency and economizer or preheater surface, FSP-50-40(167)
efficiency and steam pressure, FSP-50-40 (166-168)
efficiency chart, FSP-50-80(305)
efficiency—gas temperature curve, FSP-50-16(135)
efficiency, high-pressure, RR-50-8(48)
efficiency losses from banking, FSP-50-5 (28-29)
efficiency, plant vs. laboratory, FSP-50-33 (80, 81)
efficiency progress, FSP-50-70(171)
efficiency with oil fire, FSP-50-13(106)
efficiency with producer gas, FSP-50-54 (33)
embrittlement, FSP-50-46(227)
embrittlement inhibitors, FSP-50-58(67, 73)
embrittlement prevention, FSP-50-58
embrittlement, rapid, due to stresses above elastic limit, FSP-50-58(74)
equipment at Charles R. Huntley station, FSP-50-10(64-68)
equipment problems, FSP-50-31(43-44)
explosive combustion in, FSP-50-54(36)
fabricating equipment, FSP-50-9(59)
-feed make-up water, evaporators for, FSP-50-45
-feed make-up water from evaporators, FSP-50-45
feed pump—see pump
-feed pumps, power consumption of, FSP-50-44
feedwater and corrosion, FSP-50-46(214)
feedwater and industrial waste, FSP-50-46 (223-225)
feedwater bibliography studies, FSP-50-46 (226)
feedwater blowdown, continuous, FSP-50-46 (216-217)
feedwater deaeration, FSP-50-46(213)
feedwater deconcentrator, FSP-50-46(215)
feedwater, foaming and priming, FSP-50-46 (214)
feedwater from sewage, FSP-50-46(229-230)
feedwater, hydrogen-ion concentration, FSP-50-46(227)
feedwater hydrogen-ion concentration, FSP-50-46(228)
feedwater, internal treatment, FSP-50-46 (219-222)
feedwater, natural gas in, FSP-50-46(227, 228)
feedwater pressure filter, FSP-50-46(215)
feedwater, recarbonization of, FSP-50-46 (223)
feedwater regulator, high pressure, FSP-50-31(44)
feedwater, saponifiable, disadvantages, FSP-50-46(227)
feedwater stabilizer system, FSP-50-46 (215-216)
feedwater studies, FSP-50-46
feedwater studies, committee personnel, FSP-50-46
feedwater, total dissolved solids in, FSP-50-46(216)
feedwater treatment, FSP-50-26(8)
feedwater treatment, locomotive, RR-50-8 (45)
Boiler, boilers (*continued*)
feedwater treatment nomenclature, FSP-50-46(217-219)
fired with producer gas, FSP-50-54
fire-tube, definition, FSP-50-46(218)
fluid, organic, FSP-50-25(6)
foaming, FSP-50-58(68)
foaming, FSP-50-58(70)
foaming and phosphates, FSP-50-58(73)
foaming inhibitants, FSP-50-58(74)
foaming preventives, FSP-50-58(68)
forged seamless, FSP-50-9(59)
forged welded, FSP-50-9(59)
furnaces—see furnaces
gas velocity in, FSP-50-57(64)
geyser action prevented by cross baffle, FSP-50-57(60, 61)
Gould Street station, converted to stoker firing, FSP-50-34(98)
hammer-welded, tested above elastic limit, FSP-50-32(53)
header, FSP-50-32(54-55)
header, hydraulic test of, FSP-50-32(54)
heat absorption, FSP-50-38(136)
heat balance at various gas temperatures, FSP-50-16(135)
heat balance, graphical computation, FSP-50-80
heat-transfer surface data, FSP-50-34(88)
heating surface, FSP-50-34(95)
high-pressure, FSP-50-32; FSP-50-30(33-34)
high-pressure, at Edgar Station, Boston, FSP-50-32(59-60, 64)
high-pressure, best type of, FSP-50-32(55-56)
high-pressure, economics of, FSP-50-40(178)
high-pressure, evolution of design factors for, FSP-50-40(175)
high-pressure, feeding of, FSP-50-32(64)
high-pressure, has expensive auxiliaries, FSP-50-40(171)
high-pressure, of nickel steel, IS-50-6(11-12); IS-50-10(17)
high-pressure, saves space, FSP-50-40(169)
high-pressure, steel for, RR-50-1(1)
high-pressure, water flow in, FSP-50-30(34)
high- vs. low-pressure, data, FSP-50-40 (169-170)
hydrostatic test of, FSP-50-32(53-54)
input vs. turbine output curve, FSP-50-42 (193, 195)
installation, *Ile de France*, FSP-50-9(61)
internal protective coating, FSP-50-58(70)
large units, FSP-50-34
large vs. small, FSP-50-34(97)
leak due to gas trapped in steel, IS-50-10(23)
load and rate of heat liberation, FSP-50-81 (313)
load and service curves, FSP-50-34(86-87, 89, 90, 92-93)
load, danger of suddenly increased, FSP-50-32(58)
load-duration curve, FSP-50-78(278)
locomotive—see locomotive boiler
locomotive type, definition, FSP-50-46(218)
marine, with pulverized coal, FSP-50-25(3)
materials, FSP-50-32(51-52)
materials, creep research, FSP-50-32(51-52)
materials, temperature margins of, FSP-50-32(52)
modern, data on, FSP-50-32(67)
modern, needs more steam space, FSP-50-58(70)
needs clean feedwater at high rating, FSP-50-34(97)
of increased capacity has lower building cost, FSP-50-34(97)
operating data, FSP-50-34(89-94)
operation needs plenty of gages, FSP-50-9 (61)
performance, FSP-50-34(88, 91)
performance, blast-furnace gas-fired, FSP-50-35(106)

Boiler, boilers (*continued*)
pitting, FSP-50-46(223, 228)
pitting prevented by arsenic, FSP-50-46 (228)
plant economy, FSP-50-14(115)
plant for wood-waste utilization, WDI-50-16A and B
plant installation, FSP-50-41
plant, instruments for, FSP-50-65(134)
plant operation, principal factors in, FSP-50-34(94)
plate, carbon steel, service test, IS-50-6(11)
powdered-fuel, FSP-50-10
practice simplification, FSP-50-30(38)
pressure, higher, in locomotives, FSP-50-68 (151)
pressure with and without accumulator, FSP-50-33(71, 74-76)
progress, FSP-50-25(3); FSP-50-34(95-96)
pulsation, FSP-50-35(106)
pulverized-coal, FSP-50-10
pulverized-coal, operation and tests of, FSP-50-10(68-74)
rapid corrosion agents in, FSP-50-58(67)
rate of coal burning under, FSP-50-34(96)
rating, FSP-50-38(136); FSP-50-41(191)
rating and cleanliness, FSP-50-41(188)
rating, conservative, FSP-50-34(94-95)
rating, high percentages of, FSP-50-34(86)
rating increased by cross baffle, FSP-50-57 (53, 54)
rating, industrial, FSP-50-41(190)
rating in industrial plants, FSP-50-41(185)
rating percentage and induced-draft-fan power, FSP-50-34(87-88)
rating, plea for new method of, FSP-50-34 (99)
rating, rational, FSP-50-9(62)
rating should be conservative, FSP-50-41 (189)
reheat, FSP-50-26(7)
releasing surface, FSP-50-32(49)
return tubular, definition, FSP-50-46(218)
room efficiency progress, FSP-50-70(161)
room instruments aid to smoke abatement, FSP-50-21(166)
safe water content of, FSP-50-32(61)
scale prevention, FSP-50-58
Scotch marine, smoke abatement in, FSP-50-21(167)
setting, FSP-50-9(61)
setting openings not ample, FSP-50-57(63)
should be larger, FSP-50-78(279-280)
small, powdered coal in, FSP-50-5
station design, FSP-50-40
station, electric supply for, FSP-50-10(79)
stationary, on railroad, FSP-50-68(154-155)
steam-gas ratio, FSP-50-16(135)
steam output data, FSP-50-34(96)
steam space, FSP-50-32(49-50)
stoker-fired, merits of, FSP-50-34(97-98)
stoker vs. pulverized coal, FSP-50-34(96, 100)
strength of riveted drum, FSP-50-32(53-54)
superheater—see superheater
temperature stresses in, IS-50-6(11)
tests, hydrostatic, FSP-50-32(61)
tube calculations, FSP-50-32(56)
tube, excessive water velocity in, FSP-50-32 (66)
tube expander for, FSP-50-9(60)
tube, high-pressure, small diameter, FSP-50-32(57-58)
tube inclination, FSP-50-32(65)
tube inclination, effect of, FSP-50-32(48)
tube material, modulus of elasticity of, at various temperatures, FSP-50-32(51)
tube replacement and cross-baffle, FSP-50-57(61, 62, 63)
tube slagging, FSP-50-41(191)
tube, small, for high-pressure, FSP-50-32 (49-50)

Boiler, boilers (*continued*)
tube, steam trapped in, FSP-50-32(65)
-tube stresses, FSP-50-32(52, 54)
tube, thermal stresses in, FSP-50-32(56-57)
two-fluid system—see two-fluid system
tube, vertical, advantages of, FSP-50-32 (66-67)
tube, water and mixture velocity in, FSP-50-32(50)
tube, wide spacing in lower rows, FSP-50-34 (86)
tubes, economic number of, FSP-50-16(140)
types, FSP-50-32(49-50)
units, Colfax plant, Pittsburgh, FSP-50-34
units, Ford Motor Co., FSP-50-34
units, Gould Street station, Baltimore, FSP-50-34
units, large, FSP-50-9(61)
units, large, data on, FSP-50-32(85-87)
using blast-furnace gas, FSP-50-16(140)
vertical, baffling of, FSP-50-57
vertical, definition, FSP-50-46(218)
waste-heat, FSP-50-41(183)
waste-heat, value as fuel saver, FSP-50-4(23-24)
water analysis, FSP-50-46(225-226)
water treatment, FSP-50-46(223)
water-tube, definition, FSP-50-46(218)
water-tube, early types of, FSP-50-32(47-48)
water-wall, troubles of, FSP-50-5(32)
water walls in, FSP-50-9(60)
water and steam space, FSP-50-58(68)
water, carbon dioxide removal from, FSP-50-58(68)
water conditioning at New York Steam Corporation, FSP-50-58(71)
water conditioning based on calcium phosphate solubility, FSP-50-58(71)
water conditioning, daily records, FSP-50-58 (66, 71-72, 73)
water conditioning materials, FSP-50-58(73)
water, continuous blowdown, FSP-50-58(69, 73)
water, hydroxide alkalinity of, FSP-50-58 (65, 69, 71)
water, oxygen removal from, FSP-50-58(68)
water should have satisfactory pH value, FSP-50-58(67, 70)
water treatment, FSP-50-58
water-tube, marine, pulverized coal for, FSP-50-66
with gas producer integral, FSP-50-54(34-35)
welded, tested above elastic limit, FSP-50-9 (61)
welding, FSP-50-32(61)
with gas producer, FSP-50-12(100)
with indirect firing, FSP-50-32(58)
with interlocking controls, FSP-50-10(67)
with peep holes for bubble formation study, FSP-50-46(221)
with well-type furnaces at Charles R. Huntley station, direct-fired powdered-fuel, FSP-50-10

Bollenback, A. W. The K.S.G. process of low-temperature carbonization (D), FSP-50-28

Bonus for executive, MAN-50-9(61)
for non-productive labor, MAN-50-16(15, 16-17)
for no spoilage, MAN-50-12(12)
plan, MAN-50-5b(37)
system compared with straight time, MAN-50-16(16-17)
system, expense of, MAN-50-16(16-17)
system for non-productive labor, MAN-50-3 (15-16)
system for quality of product, MAN-50-12 (12)
to executives to control expense, MAN-50-9 (58)

Booth, H. E. The prerequisites of successful polishing (D), MSP-50-6

Bosler, L. C. Factors governing the purchase of coal (D), FSP-50-7
The use of fuels in brick kilns, (D), FSP-50-11

Boston, Orlan W. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
The development of machine tools from a user's viewpoint (D), MSP-50-2
Training minor executives in a rapidly growing organization (D), MAN-50-11

Boussinesq and Parenty, air flow research, APM-50-3(8)

Bowles, J. D. The economic field for large Diesel engines (D), OGP-50-11

Boyer, R. L. Manufacture of Diesel fuel injectors (D), OGP-50-7

Brace, P. W. A study of tin-base bearing metals (D), MSP-50-11

Braglio, C. Mechanical properties of aluminum casting alloys at elevated temperatures, IS-50-8
Templin, R. L., and Marsh, K. Mechanical properties of aluminum casting alloys at elevated temperatures, IS-50-8

Brah, S. M. The apprenticeship-training program of the Tri-City manufacturers, MAN-50-14

Brake, air-, research on, RR-50-1(4-5)

Brakes, for airplanes, AER-50-1(2); AER-50-15 (59)
hydraulic, for airplane, AER-50-1(2)

Brass mill, production control in, MAN-50-4

Brass tubing, seamless, for hydraulic feed, MSP-50-4(53)

Brauer, F. M. Mechanical properties of aluminum casting alloys at elevated temperatures (D), IS-50-8
Ball-bearing machine-tool spindles (D), MSP-50-10
Mechanical properties of aluminum casting alloys at elevated temperatures (D), IS-50-8

Braunfels station, Texas, FSP-50-25(3)

Bregowsky and Spring, data on aluminum bronze, AER-50-7(6)

Breinl, J. C Some factors in furnace design for high capacity (D), FSP-50-78

Brelsford, H. E. Diesel-fuel-oil specifications (D), OGP-50-10

Brewer, Allen F. An investigation of the performance of waste-packed armature bearings (D), APM-50-1
Armature bearing performance (D), APM-50-1(10)

Brewer, Arthur. Production control in a wrought-brass mill, MAN-50-4

Brewer, R. W. A. The problem of solid fuel injection in high-speed flexible oil engines (D), AER-50-18

Brick, oxidation of, FSP-50-11(81)
soaking of, FSP-50-11(81-82)
stages of firing of, FSP-50-11(81-82)
kiln, fuels in, FSP-50-11

Bridge for handling ore, MH-50-6(4)

Bridges, vibration of, RR-50-9

Brinell hardness technique, MSP-50-11(27-28)
machine, small-size, MSP-50-11(28)
numbers for aircraft steel, AER-50-5(1)

Brinton, Willard C. Cargo cranes—types available, factors governing selection, and latest developments (D), MH-50-5
Marine terminal operation, MH-50-11
Operating costs of electric industrial trucks and tractors (D), MH-50-3

Broach, hydraulic, MSP-50-4(33)

Broaching machine, hydraulic, MSP-50-5(62-63)

Bronze for decorative printing, reasons for, PI-50-6(13-14)
in printing, doping of, PI-50-6(19)
hy-ten-sl, in Meyer governor, PI-50-2(10)

Bronzer and bronze dust disposal, PI-50-6(16-17)
explosion danger, PI-50-6(17)
vacuum, PI-50-6
Bronzes and brasses for aircraft engines, AER-50-5(1-2)
Bronzing, carelessness in, PI-50-6(17-18)
demand for, PI-50-6(18)
equipment should be kept clean, PI-50-6(19)
high-speed, PI-50-6(19-20)
machine, PI-50-6
machine explosions, PI-50-6(18)
problems and methods, PI-50-6
sizing methods, PI-50-6(18)
use of magnesia in, PI-50-6(17)
Brooks, F. W., and Wohlenberg, W. J. Some fundamental considerations in the design of boiler furnaces, FSP-50-39
Brooks, H. W. Combustion and heat transfer (D), FSP-50-3
Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
Economics of dry-quenching coke by the Sulzer process (D), FSP-50-17
The K.S.G. process of low-temperature carbonization (D), FSP-50-28
The use of pulverized coal in basic open-hearth furnaces (D), FSP-50-36
The use of pulverized coal in basic open-hearth furnaces (D), IS-50-5
Broshek, J. J. Diesel-fuel-oil specifications (D), OGP-50-10
Brown, H. P. Our need for knowledge of tropical timbers (D), WDI-50-10
The need of research on tropical woods before marketing them (D), WDI-50-9
Bryan, Marcus K. The value of water in textile mills for purposes other than water power (D), TEX-50-2
Brydon, H. Boyd. Some economic factors in power-station design, FSP-50-40
Bubble formation in foaming, FSP-50-46(221)
tower in petroleum industry, PET-50-5(9-10)
Büchi system supercharging—see supercharging
Buckingham, Earle. The economics of machine-tool replacement (D), MSP-50-5
Budget control, MAN-50-5a; MAN-50-5b; MAN-50-9(59-61)
control, some essential principles for, MAN-50-5a
for repairs, MSP-50-3(25)
maintenance, MSP-50-3(26, 27, 29)
period, MAN-50-5a(31)
revision, MAN-50-5a(31); MAN-50-5b(39)
tolerances, MAN-50-5b(39-40)
Budgetary control—see budget control
Buffalo airport, development of the, AER-50-8
Building interior and smoke damage, FSP-50-75(217)
Buildings and grounds maintenance, MSP-50-3(20)
Bulk material handling at docks and storage plants, MH-50-6
Bulkley, Ronald. An investigation of the performance of waste-packed armature bearings (D), APM-50-1
Burlingame, Luther D. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
The development of machine tools from a user's viewpoint (D), MSP-50-2
Burner, pulverized coal, FSP-50-25(2)
design for pulverized coal, FSP-50-72
Burning of liquid fuel, FSP-50-13
Burns, H. H. Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
Burt, C. R. The economics of machine-tool replacement (D), MSP-50-5
Bus bodies, static loads upon, WDI-50-6
body construction and design, WDI-50-6
body, static loads on, WDI-50-6
Bus-body stress analysis by use of model, WDI-50-6
Business cycles, MAN-50-1(3)
letter, work required to type, MAN-50-18(35-36)
volume obtained by weighing mail in mail-order house, MH-50-8(21, 24)
Butler, W. H. Diesel-fuel-oil specifications (D), OGP-50-10
Butt, Howard. The economics of air-preheater applications (D), FSP-50-16
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Butterfield, T. E. The K.S.G. process of low-temperature carbonization (D), FSP-50-28
Buxbaum, William. The prerequisites of successful polishing (D), MSP-50-6
Buying, hand-to-mouth, MAN-50-1(2-3)
Buzzo, Joseph T. Sugar-warehouse conveying systems, MH-50-2

C

Cadman, R. W. A study of tin-base bearing metals(D), MSP-50-11
Cahokia station, FSP-50-34(97); FSP-50-71
station investment, FSP-50-71(182-183)
station using powdered Illinois coal, refractories problems, FSP-50-38
Calderwood, James. Investigation of torsional vibration, abstracted, AER-50-4(16)
Calhoun, F. B. Production-control methods in the rubber industry, MAN-50-2
California, flying in, AER-50-13(49)
weather stations in, AER-50-13(51-52)
Calite E for furnace baffle, FSP-50-76(227)
Callomon, C. B. Physical properties of alloy steels under various heat treatments and at elevated temperatures, IS-50-4
Calorific value of coal, FSP-50-51(6)
Cam engine—see aircraft engine, cam
Camera, 20,000 exposures per second, for air flow study, AER-50-1(4)
Caminez engine, the development and technical aspects of the Fairchild, AER-50-9
Caminez, Harold. The development and technical aspects of the Fairchild Caminez engine, AER-50-9
Cammann, O., Jr. Economic production quantities (D), MAN-50-10
Cammen, Leon. Sheet rolling, IS-50-9
The manufacture of nickel-steel plate (D), IS-50-10
Campbell's copper-tin diagram, MSP-50-11(13)
Cannon, H. B. Some fundamental consideration in the design of boiler furnaces (D), FSP-50-39
Capacity factor of power station, FSP-50-40(160-161)
Car, coal transfer, electric, MH-50-6(2)
dumper, MH-50-6
dumper with Ward Leonard control to save power, MH-50-6(1)
handling, Chesapeake and Ohio, MH-50-6(4)
loader, MH-50-8(19)
retarder operation during cold weather, RR-50-12(21, 27)
retarder systems, types of, RR-50-12
tank, for shipping rosin, MH-50-4(8)
Carbon burned per pound of fuel, chart, FSP-50-80(301)
dioxide and excess air, FSP-50-78(275)
dioxide in flue gas, FSP-50-52(19-20)
fixed, in coal, FSP-50-51(2-3, 8-9), FSP-50-52(23)
Carbonization, Coalite process, FSP-50-27(15)
early processes, FSP-50-27(10)
in the United States, the economics of coal, FSP-50-27
K.S.G., cost data, FSP-50-28(23)
Carbonization (*continued*)
K.S.G., economics, FSP-50-28(24-27)
K.S.G., fineness of coal for, FSP-50-28(21)
K.S.G., heat and power required, FSP-50-28(21-22)
K.S.G. process, results, FSP-50-28(20)
K.S.G. process, yield, FSP-50-28(21)
K.S.G., products and their markets, FSP-50-28(20, 22-23)
low-temperature, FSP-50-25(3-4, 5); FSP-50-27(12-13); FSP-50-70(170-171, 172)
low-temperature, economics of, FSP-50-27(16)
low-temperature, K.S.G. process, FSP-50-28
low-temperature, products, FSP-50-70(172)
of coal, FSP-50-27; FSP-50-70(172)
retorts, K.S.G., FSP-50-28(18-20)
the K.S.G. process of low-temperature, FSP-50-28
Carborundum refractories, FSP-50-25(1)
as refractory, FSP-50-8(58)
brick and slag, FSP-50-66(140)
brick at stoker clinker line, FSP-50-65(129)
for furnace wall, FSP-50-70(173)
Cardullo, F. E. Ball-bearing machine-tool spindles (D), MSP-50-10
Cargo cranes—types available, factors governing selection, and latest developments, MH-50-5
customs weighing of, mechanical, MH-50-11(5-6)
packages should be shaped for easy handling, MH-50-11(5)
sorting, MH-50-11(3-5)
stowing, MH-50-11(10)
stowing in order to minimize sorting, MH-50-11(4-5)
trimming, mechanical, MH-50-11(6)
Carmichael, A. J. The prerequisites of successful polishing (D), MSP-50-6
Carrier, Willis H. General heat-transfer formulas for conduction and convection (D), PET-50-2
Carroll, Harry C. Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
Carrow, Thomas H. Can accident prevention be reduced to a science? RR-50-3
Cars, passenger, heating and ventilating, RR-50-6
Carter, Emmett B. An industrial-plant-location study, MAN-50-15
Carter, W. A., and Hirshfield, C. F. Boiler-furnace refractories (D), FSP-50-64
Case, A. F. Bulk material handling at docks and storage plants, MH-50-6
Case factor of centrifugal pump, HYD-50-3(2, 10-11)
Cashiering department motion study, MAN-50-17A
Castigliano's theorem, APM-50-16(73)
theorem applied to pipe bends, FSP-50-49(244–247, 251-252)
Casting, centrifugal, MSP-50-18(26)
inspection of, MSP-50-15(3)
peculiarities of tin-base metals, MSP-50-11(14-15)
permanent-mold, IS-50-1(2)
x-ray tests of, FSP-50-40(180)
Castor oil cures foaming, FSP-50-45(210)
oil prevents priming, FSP-50-46(222)
Cattermole, L. G. Control of quality (D), MAN-50-7
Cedar tree in State of Washington, WDI-50-7(4)
Celander, Alfred B. Manufacturing and wage-payment methods as practiced by the Hall-Scott Motor Car Company, MAN-50-1
Cement refractoriness, FSP-50-8(53)
refractory, FSP-50-64(121)
Central power station and Diesel engine, OGP-50-14

Central (*continued*)
power station vs. industrial plant, FSP-50-4 (26)
station accounting, FSP-50-71(183, 184)
station and by-product coke, FSP-50-27 (13-14)
station, base-load, FSP-50-27(14)
station data, 1926-27, FSP-50-25(1)
station load, FSP-50-29(30)
station performance, FSP-50-78(271-272)
station steam capacity, OGP-50-11(62)
station use of pulverized coal, FSP-50-71
Centrifugal fan, diameter, effect of, APM-50-5(5)
fan drive, types of, APM-50-5(7)
fan, entrance angles, effect of, on, APM-50-5(3-4)
fan, high-speed compared with low-speed APM-50-5(7)
fan, housing must suit, APM-50-5(6)
fan, impact and turbulence in, APM-50-5(2)
fan performance, effect of entrance and discharge angles on, APM-50-5
fan performance, factors affecting, APM-50-5(3-5)
fan, static pressure equations for, APM-50-5(1-2, 6-7)
fan test results, APM-50-5(2-5), 6
fan test unit, APM-50-5(2)
force in cycloidal propellers, AER-50-12(36)
pump—see pump, centrifugal
Ceramic industries materials handling, MH-50-1 (5)
ware kiln, FSP-50-56(45)
Chain drive for Diesel camshaft, OGP-50-1(3)
grate progress, FSP-50-25(2)
stores in Europe, MAN-50-1(1)
Chandler, Jr., W. P. Combination firing of blast-furnace gas and pulverized coal (D), FSP-50-35
The use of pulverized coal in basic open-hearth furnaces (D), FSP-50-36
The use of pulverized coal in basic open-hearth furnaces (D), IS-50-5
Chapman, W. B. Fuels, past and prospective (D), FSP-50-1
Industrial-furnace efficiency, economic consideration, FSP-50-55
Plant maintenance and return on capital investment, MSP-50-3
Progress in gas-producer practice, FSP-50-12
Progress toward direct firing of boilers with producer gas, FSP-50-54
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
The high cost of fuel saving (D), FSP-50-4
Charles R. Huntley station, FSP-50-25(5)
Chart, industrial, psychology of, MAN-50-11(7)
Charters, D. B. Coordinating wage incentives and production control, MAN-50-3
Chatfield, C. H. Airplanes (D), AER-50-15(57)
Chemical stability of aluminum alloys, AER-50-7(5)
Chemicals, handling, MH-50-4(5)
Chimneys designed for smoke abatement, FSP-50-21(165-166)
Chorlton, Alan E. L. Experimental combustion chambers designed for high-speed Diesel engines (D), OGP-50-2
The study of oil sprays for fuel-injection engines by means of high-speed motion pictures (D), OGP-50-3
Research on oil engine efficiency, AER-50-11(18)
Christie, A. G. The economics of coal carbonization in the United States (D), FSP-50-27
High-pressure steam at Edgar station (D), FSP-50-30
The K.S.G. process of low-temperature carbonization (D), FSP-50-28
The Ruths steam accumulator (D), FSP-50-33
Christy, William G. Damage due to smoke (D), FSP-50-75
Organizing a smoke-abatement campaign (D), FSP-50-22
Railway smoke abatement (D), FSP-50-19
Smokeless and efficient firing of domestic furnaces—Part II (D), FSP-50-76
Chromium plating of cutting tool, MSP-50-18 (26)
Chuck, hydraulic vs. air, MSP-50-4(57)
Chucking machine, MSP-50-5(64-65)
Chute for materials handling, MH-50-2(4)
Chwang, C. T. Efficiencies of Otto and Diesel engines, OGP-50-5
Circulating water, chlorine-treatment of, FSP-50-31(43)
Circulation in evaporator, tests, FSP-50-45(208)
Cities advertising for industries to locate, MAN-50-1(3)
Clark, C. L., and White, A. E. Properties of ferrous metals at elevated temperatures as determined by short-time tensile and expansion tests, FSP-50-50
Clark, Frank S. Some economic factors in power-station design (D), FSP-50-40
Clark, J. N. Railway practices in utilization and conservation of oil, FSP-50-68
Clark, W. R. Determination of minimum-cost purchase quantities (D), MAN-50-6
Production control in a wrought-brass mill, MAN-50-4
The manufacture of seamless tubes (D), IS-50-7
Clay products handling, MH-50-4(5)
Clements, Bishop. Metallurgy of aircraft engines, AER-50-5
Clerical staff economics, MAN-50-1(4)
Clinker grinder, MH-50-12(14); FSP-50-65(130); FSP-50-70(162)
on stokers, FSP-50-65
of coal—see coal
of coal ash as related to laboratory fusibility determinations, FSP-50-6
of coal ash, FSP-50-6
prevented by limestone, FSP-50-38(139-140)
Cluster rolling mill, IS-50-2(4-5)
Clutch, machine-tool, MSP-50-1(2)
magnetic, OGP-50-1(1)
Coagulation, definition, FSP-50-46(218)
Coal, air cleaning of, FSP-50-18(151-152)
air needed for various, FSP-50-52(23-24)
amount used by railroads, FSP-50-69(157)
analyses, FSP-50-6(34-35); FSP-50-2(8); FSP-50-52(11)
analysis, proximate and ultimate, FSP-50-51 (3)
analysis, typical, FSP-50-39(143)
analysis, ultimate, FSP-50-51(3)
analysis, ultimate, and calorific value and volatile matter, FSP-50-51(6-7)
anthracite, FSP-50-2(6-7)
anthracite, Pennsylvania, FSP-50-52(12)
ash as related to laboratory fusibility determinations, the clinkering of, FSP-50-6
-ash and slag composition, FSP-50-38(132-133)
-ash composition compared with fusibility, FSP-50-6(38)
ash, composition of, FSP-50-6(35-36)
ash, fusibility tests, methods and results, FSP-50-6(36-38)
bituminous, FSP-50-2(6)
bituminous for use in brick kiln, FSP-50-11 (92)
bituminous will eventually not be burned in raw state, FSP-50-62(105)
brown, in Germany, FSP-50-51(1)
burner, turbulent, FSP-50-15(119)
burning characteristics of, FSP-50-52
burning principles, FSP-50-70(161)
burning reactions, FSP-50-52(14-15)
Coal (*continued*)
cannel, FSP-50-51(1, 3)
carbonization—see also carbonization
carbonization economics, FSP-50-27
carbonization in the United States, the economics of, FSP-50-27
carried in compressed-air siphon, FSP-50-36(107)
characteristics, FSP-50-73(199)
chemical analysis, FSP-50-73(201)
classification, FSP-50-7(47); FSP-50-51
classification according to chemical compounds, FSP-50-51(5-6)
classification by fuel ratio, FSP-50-51(2-3)
classification by macroscopic and microscopic appearance, FSP-50-51(5)
classifier, hydraulic, FSP-50-53(25)
cleaner, contamination in, FSP-50-53(28, 30)
cleaning by air, FSP-50-53(29)
cleaning economics, FSP-50-53(29)
cleaning losses, FSP-50-53(26)
cleaning methods, FSP-50-69(159)
cleaning reduces ash, FSP-50-53
cleaning, value of, to consumer, FSP-50-53 (27-28)
clinker grinder, MH-50-12(14)
clinkers, conclusions, FSP-50-6(43-44)
clinker formation affected by size of coal, FSP-50-6(41)
clinker formation, coordination of, with float-and-sink test, FSP-50-6(43)
clinker formation, coordination of, with fusibility, FSP-50-6(41-42)
clinkers studied in experimental furnace, FSP-50-6(39-41)
coking, FSP-50-51(9)
coking, pulverized, FSP-50-52(19-20)
combustion and pulverization fineness, FSP-50-60(87, 90)
combustion of volatile in, FSP-50-52(19)
condition on locomotive, FSP-50-73(200)
conservation by railroads, FSP-50-74
constitution, FSP-50-51
consumption on locomotive, tests, FSP-50-73 (200-204)
consumption, railroad, FSP-50-74(209)
cost, FSP-50-40(178, 179)
cost and steam pressure, FSP-50-40(172)
definition of, FSP-50-51(1)
destructive distillation, FSP-50-51(7)
discovery credited to Father Hennepin, FSP-50-1(1)
Diesel fuel from, FSP-50-27(15)
distillation of, FSP-50-2(7)
distillation economics, FSP-50-27(14-15)
distribution, railroad, FSP-50-74(211)
drier, FSP-50-53(30)
dry cleaning of, FSP-50-53(28)
economy education, FSP-50-74(210)
flame characteristics, FSP-50-52(16-17)
float-and-sink tests, FSP-50-6(34-35)
formation, FSP-50-51(1-2)
for railroad, types of, FSP-50-74(209)
for stoker locomotives, FSP-50-69(158)
for tunnel kiln, FSP-50-56(44)
free-burning, pulverized, FSP-50-52(20)
gas from, FSP-50-52(14-17)
gas utilization, FSP-50-25(4)
gasification of, FSP-50-1(2)
gasoline from, Bergius process, PET-50-1(9)
geological age of, FSP-50-52(11)
graded according to hydrogen, carbon, and oxygen, FSP-50-51(4-5)
graphitic, Rhode Island, FSP-50-52(11-12)
grouped according to burning characteristics, FSP-50-52(14)
Hamstead, composition of, FSP-50-51(6)
heating value, FSP-50-73(201)
heating value compared with grade, FSP-50-73(199-200)
ignition temperature, FSP-50-78(282)
Illinois, FSP-50-52(13)

Coal (*continued*)
Illinois, analysis, FSP-50-38(127)
industry, mechanical loaders in, MH-50-7 (12)
inferior, furnace for, FSP-50-70(169-170)
influenced by original vegetable deposit, FSP-50-51(4)
is principally degradation product of lignocellulose, FSP-50-51(4-5)
lignitic, FSP-50-2(6)
liquefaction, FSP-50-25(4)
lubricants from, FSP-50-2(7-8)
magnetic separator for, FSP-50-10(66)
metamorphism, diagram of, FSP-50-51(2)
mill for pulverizing, FSP-50-66(139)
mine inspection, FSP-50-74(209-210)
mine inspection by railroad, FSP-50-69(157, 160)
mining, increased output per man, FSP-50-25(1)
mining, mechanical loaders for, MH-50-1(4)
mining so as to give clean coal, FSP-50-53 (26-27)
moistened to improve chain-grate operation, FSP-50-65(128)
New River, FSP-50-52(13)
on chain grate, FSP-50-52(20-21)
operator and the railroad, FSP-50-73(199)
Parr's classification, FSP-50-51(3-4, 7)
physical properties important, FSP-50-51(8)
Pocahontas, FSP-50-52(12-13)
powdered, for small boilers, FSP-50-5
preparation, FSP-50-18; FSP-50-53; FSP-50-73(199)
processed into smokeless fuel, FSP-50-1(2)
producer-boiler for, FSP-50-1(3)
-producing states, FSP-50-69(157)
pulverized, FSP-50-26(8)
pulverized, advantages, FSP-50-15(121, 122)
pulverized, air velocity for, FSP-50-72(196-197, 198)
pulverized, analysis of, suitable for open-hearth furnace, IS-50-5(6)
pulverized, analytical tests, FSP-50-60(89-90)
pulverized, and furnace construction, FSP-50-78(255)
pulverized, and oil combination burner, FSP-50-66(135)
pulverized, and slag, FSP-50-61(99-100)
pulverized, ash handling of, MH-50-12(14-15)
pulverized, ash problems, FSP-50-78(276)
pulverized, at Charles R. Huntley station, FSP-50-10
pulverized, bin-system disadvantages, FSP-50-72(192)
pulverized, bin vs. unit system, FSP-50-71 (179-180)
pulverized, breaker, Bradford type, FSP-50-10(66)
pulverized, burned by turbulent burner, FSP-50-13(105)
pulverized, burned with large coal, FSP-50-15(119-120)
pulverized, burner and slag problems, FSP-50-71(181-182)
pulverized, burner design, FSP-50-61(98-100)
pulverized, burner problems, FSP-50-71 (180-181)
pulverized, burner specifications, FSP-50-72 (192-193)
pulverized, burner turbulence, FSP-50-71 (184)
pulverized, calumet burner for, FSP-50-10 (65); FSP-50-78(262)
pulverized, CO_2 from, FSP-50-61(100)
pulverized, causes improved economy, FSP-50-5(27)
pulverized, compared with lump, FSP-50-52 (18-19)
pulverized, conveyed by compressed air, IS-50-5(6)
Coal (*continued*)
pulverized, danger from tramp metal, FSP-50-60(92)
pulverized, density compared with air, FSP-50-72(193)
pulverized, drying, FSP-50-71(180)
pulverized, dust nuisance from, FSP-50-77 (251-252)
pulverized, economics, FSP-50-12(96-97)
pulverized, economy of, in open-hearth furnace, IS-50-5(7)
pulverized, effect on refractories, FSP-50-38
pulverized, efficiency curve for, FSP-50-5 (28)
pulverized, falling velocity in still air, FSP-50-72(194)
pulverized, fineness advantages, FSP-50-60 (92)
pulverized, fineness and combustion, FSP-50-60(87, 90)
pulverized, fineness and mill wear, FSP-50-60(92)
pulverized, fineness of, FSP-50-52(22-24)
pulverized, fineness of as affected by mill types, FSP-50-60
pulverized, fired with blast-furnace gas, FSP-50-35
pulverized, firing with, FSP-50-10(74)
pulverized, first used in large stations, FSP-50-5(27)
pulverized, flame from, FSP-50-66(142)
pulverized, flame length, FSP-50-72(194)
pulverized, for basic open-hearth furnaces, FSP-50-36
pulverized, for marine water-tube boiler, FSP-50-66
pulverized, for oil still, PET-50-1(6)
pulverized, for open-hearth purposes, analysis, FSP-50-36(108)
pulverized, furnace and burner, design for, FSP-50-72
pulverized, handling moisture in, FSP-50-61 (97, 101)
pulverized, ignition of, with household-furnace oil, FSP-50-10(67)
pulverized, ignition temperature varies with fineness, FSP-50-72(195)
pulverized, in basic open-hearth furnace, IS-50-5
pulverized, in cement plants, FSP-50-52 (22, 24)
pulverized, in central station, FSP-50-71
pulverized, in industrial plants, FSP-50-41 (187-190)
pulverized, in steel plants, IS-50-1(1)
pulverized, limitations, FSP-50-12(97)
pulverized, mill economics, FSP-50-60(94)
pulverized, mill performance, FSP-50-60 (93-94); FSP-50-71(180)
pulverized, mills for, FSP-50-5(27-28)
pulverized, moisture in, FSP-50-72(196, 197)
pulverized, needs hot furnace walls, FSP-50-39(155)
pulverized, needs intensive mixing with air FSP-50-52(19)
pulverized, photomicrographs, FSP-50-60 (88, 89, 91)
pulverized, primary air for, FSP-50-72(193-194)
pulverized, progress, FSP-50-25(2-3)
pulverized, prospects, FSP-50-71(183)
pulverized, poor combustion of, FSP-50-5 (27-28)
pulverized, progress in, FSP-50-25(2-3)
pulverized, safety, FSP-50-70(174)
pulverized, screen test of dust from, FSP-50-59(77)
pulverized, size of, related to slag, FSP-50-66 (138)
pulverized, spontaneous combustion of FSP-50-35(104)
pulverized, systems at Cahokia, FSP-50-71 (179-180)
Coal (*continued*)
pulverized, tests on grinding various fines, FSP-50-60(94-95)
pulverized, turbidimeter fineness, FSP-50-60 (92)
pulverized, turbulent burner for, FSP-50-72 (197)
pulverized, turbulent burning of, FSP-50-41 (192)
pulverized, typical installations, FSP-50-5 (28-31)
pulverized, unit and central systems, FSP-50-61(98-99)
pulverized, unit system and automatic control, FSP-50-61(101)
pulverized, unit-system economy, FSP-50-61(100)
pulverized, unit-system insurance is cheap, FSP-50-61(100)
pulverized, unit system, FSP-50-41(187, 192); FSP-50-61
pulverized, U. S. Navy tests of, FSP-50-10 (77)
pulverized, velocity on leaving burner, FSP-50-61(99)
pulverized vs. lump, FSP-50-52(23)
pulverized, with oil standby, FSP-50-66(141)
pulverizing equipment, FSP-50-36(107-108)
pulverizing of, FSP-50-52(11-14)
purchase, factors governing, FSP-50-7
quality, check on, FSP-50-7(46)
quality improved by discipline at mine, FSP-50-18(151)
rating, chemical, FSP-50-69(158)
rating, physical, FSP-50-69(158)
research needed, FSP-50-62
research program, A.S.M.E., FSP-50-62(104)
reserves economically low, FSP-50-2(6)
resources, FSP-50-2
sampling, FSP-50-7(50); FSP-50-10(70, 72)
screenings for locomotive, FSP-50-69(160); FSP-50-73(205-206)
selection, FSP-50-7
sized vs. slack, FSP-50-53(29)
sizes, value of in locomotive service, FSP-50-73
slacking, FSP-50-51(3)
smoke nuisance, FSP-50-1(2)
smoking qualities of, FSP-50-76(225)
specific gravity of, and separation, FSP-50-53(29, 30)
specifications, FSP-50-2(8); FSP-50-7(47-49)
soot and tar in gas from, FSP-50-52(18)
sub-bituminous, FSP-50-52(13)
sub-bituminous, for railroad, FSP-50-68(155)
sulphur in, removed by washing, FSP-50-53 (25, 28)
sulphur forms in, FSP-50-6(35)
ulmins in, FSP-50-51(4-5)
underwater combustion of, FSP-50-1(2, 3)
utilization by railroads, FSP-50-74
vegetable origin of, FSP-50-51(1)
vendor, FSP-50-7(46)
vs. oil for kilns, FSP-50-56(50)
vs. oil for locomotives, FSP-50-68(150-151)
washability tests, FSP-50-53(25)
washed, fines in, FSP-50-53(28, 30)
washer, types of, FSP-50-53(25)
washing, FSP-50-18(151); FSP-50-53
washing lowers ash fusion point, FSP-50-53 (27, 28)
with volatile driven off, FSP-50-52(14)
-wood waste equivalent, WDI-50-16B(28, 29, 35-36)
Coalinoil, FSP-50-13(110, 111)
Coalite process, FSP-50-27(15)
Coating of rolled metals, IS-50-2(2)
Coes, H. V. Budgetary control (D), MAN-50-5b
Fundamental principles in materials handling, MH-50-7

Coes, H. V. (*continued*)
Materials handling as an aid to production (D), MH-50-4
Operating costs of electric industrial trucks and tractors (D), MH-50-3
Some essential principles for budgetary control, MAN-50-5a
Coffin, Louis F. Rolling-mill lubrication (D), IS-50-11
Stoker advantages and disadvantages (D), FSP-50-65
Coke and the blast furnace, FSP-50-27(10)
and smoke abatement, FSP-50-28(26)
by-product, and the central station, FSP-50-27(13-14)
dry quenching of, FSP-50-25(4-5)
for domestic furnace, FSP-50-76(229-231)
for smoke-abatement, FSP-50-23(182)
low-temperature carbonization of, FSP-50-27 (12-13)
oven, beehive, FSP-50-27(11)
-oven gas, FSP-50-27(15)
petroleum, obviates clinker and ash trouble, FSP-50-5(31-32)
production compared with pig iron, FSP-50-27(10-11)
superiority of high-temperature, FSP-50-27 (12)
vs. anthracite, FSP-50-28(26)
of various coals, FSP-50-28(21)
Colby, H. S. The economics of air-preheater applications (D), FSP-50-16
Cold draw, number needed in brass mill, MAN-50-4(21)
rolling—see rolling mill
Coler, C. S. Training minor executives in a rapidly growing organization (D), MAN-50-11
Coley, W. L. Control of quality (D), MAN-50-7
Colfax station, capacity factor, FSP-50-40(162)
College education helps in railroad career, RR-50-2(14-16)
graduate—see also engineering graduate
graduate in railroad and railroad supply industries, RR-50-2
technical specialization in, not desirable, RR-50-1(2-3)
Collier, Guy B. Analysis of strains and stresses in a wristpin, APM-50-2
Collings, F. S. The economics of air-preheater applications (D), FSP-50-16
Colloidal fuel, FSP-50-13(110)
Collotype, PI-50-10(37)
Color needed in modern life, PI-50-10(33)
Column, columns:
coefficient of resisting moment of, APM-50-9(68-69)
deflection diagrams, APM-50-9(68)
eccentrically loaded, approximate solution, APM-50-9(69-70)
eccentrically loaded, comparison of various formulas, APM-50-9(71)
fixed-ended, APM-50-9(66)
formula, Euler's, APM-50-9(65, 78, 79)
formula, Rankine's, APM-50-9(65)
investigations by Ros and Brunner, APM-50-9(80)
load-deflection curves for, APM-50-9(65)
pin-ended, APM-50-9(66)
pin-ended and initially curved, APM-50-9 (70–78); comparison of various formulas APM-50-9(74, 78)
theory, assumed stress-strain diagram for APM-50-9(67-68)
theory assumptions, APM-50-9(67)
theory investigators, APM-50-9(65)
theory notation, APM-50-9(66)
theory, verification of results, APM-50-9 (76-78)
Combination firing of blast-furnace gas and pulverized coal, FSP-50-35
Combustible in ash and ashpit size, FSP-50-70 (164, 165)
and excess air, FSP-50-52(20)
and furnace shape, FSP-50-52(20)
and heat transfer, FSP-50-3
and over-fire air, FSP-50-52(21)
bibliography, FSP-50-3(19)
Bunsen-cone, FSP-50-3(16)
chamber for high-speed Diesel engine, OGP-50-2—see also under Diesel engine
chamber in Benson boiler, FSP-50-32(63)
chambers, experimental, designed for high-speed Diesel engines, OGP-50-2
conclusions, FSP-50-3(14)
control, automatic, FSP-50-14
control, hard, difficulties of, FSP-50-14(115)
control progress, FSP-50-26(8)
control in oil engines, AER-50-11(17)
control, method of automatic, FSP-50-14 (114-115)
devices, FSP-50-70(161-162)
incomplete, loss due to, FSP-50-55(38-39)
over stoker, FSP-50-70(171)
power requirements for, FSP-50-70(164-166)
products, analysis, FSP-50-39(143)
products, temperature drop passing through furnace, FSP-50-70(172)
rapid caused by high velocity, FSP-50-52 (17-18)
rate, FSP-50-78(253-270)
rate and air preheating, FSP-50-71(182)
rate, effect on refractories, FSP-50-38(135-136)
rate high in rotary furnace, FSP-50-25(6)
rate of carbon in oxygen and rate of mixing, FSP-50-78(281-282)
rate of stokers, FSP-50-65
requirements, FSP-50-78(270)
spontaneous, of coal, FSP-50-35(104)
temperature, maximum, FSP-50-78(280)
of heavy fuels in oil engines, AER-50-11(18)
in aircraft oil engines, AER-50-11
Commercial airplanes, the design of, AER-50-15
airways, meteorological service for, AER-50-13
airways, AER-50-13
airways, alternative course for, AER-50-13 (49)
Commodity rates and plant location, MAN-50-15 (9)
Commutator neck deflection and stress, APM-50-16(69)
Comparator, thread, MSP-50-15(4)
Compressed air and machine tools, MSP-50-4(41)
air for woodworking, WDI-50-1(1)
air reservoir, cast iron, APM-50-12(19, 23)
air reservoir codes, APM-50-12(19)
air reservoir design, APM-50-12(18)
air reservoir safety, APM-50-12(23)
air reservoir tests, APM-50-12(18)
Compressive tests of balsa wood, WDI-50-12
centrifugal compared with centrifugal pump, HYD-50-3(14,16)
Compressors, centrifugal or reciprocating, nozzle flow tests of, APM-50-3(5)
Concrete surfaced airports, AER-50-26(64)
Condensate deaeration, FSP-50-26(9)
Condensation of vapor, heat exchange in, PET-50-2(19)
Condenser operation and industrial waste, FSP-50-46(223-225)
refrigerator, uses extruded copper tubes, MSP-50-9(96)
relieved by heater in high-pressure locomotive, RR-50-8(34)
static, to improve power factor, FSP-50-41 (183)
exhaust for locomotive, high steam pressure and, RR-50-8
Conditions in furnaces burning powdered Illinois coal with long-flame burners, refractories service, FSP-50-38
Conduction loss in industrial furnace, FSP-50-55 (38)
of heat, formulas, PET-50-2
Conductivity of aluminum alloys, AER-50-7(4)
Conference course, subjects given at Pennsylvania State College, MAN-50-11(6)
method of training minor executives, MAN-50-11
leader training, MAN-50-11(6)
Connolly, J. H. Shop-equipment policies in representative plants (D), MSP-50-7
Conowingo hydro development, HYD-50-1(2)
Conservation of material, MAN-50-1(3-4)
Construction made lighter by use of steel, MH-50-1(1)
of cycloidal propellers, AER-50-12(36)
work, materials handling, MH-50-1(4-5)
Container, unit, railway car, RR-50-7(31)
Continuous plant (water treatment) definition, FSP-50-46(218)
Control of factory overhead, MAN-50-9
Control of production in a wrought-brass mill, MAN-50-4
of quality, MAN-50-7
of quality in a manufactured product, MAN-50-13
Controllability of thrust direction of cycloidal propellers, AER-50-12(38)
Convection of heat, formulas, PET-50-2
Conversion loss in paper making, WDI-50-3(6)
Conveying systems, sugar-warehouse, MH-50-2
Conveyor, ash, MH-50-1(4)
ball bearing, failure, MH-50-2(3)
for bronzing machine, PI-50-6(15)
conveys on upper and return belt, MH-50-2 (1)
pneumatic, MH-50-1(4)
pneumatic, in mail-order house, MH-50-9(22)
progress, MH-50-1(2-4)
remote-control system, MH-50-2(2-3)
scale, MH-50-2(3)
slat-type, MH-50-2(3)
system in mail-order house, MH-50-9
tramrail—see tramrail conveyor
twin-screw, for piling bags, MH-50-2(4)
versatility of, MH-50-3(8)
weighing, MH-50-2(3)
with electric counter, MH-50-2(3)
Conway, Martin J. The K.S.G. process of low-temperature carbonization (D), FSP-50-28
Conway, M. J. T. Can accident prevention be reduced to a science? (D), RR-50-3
Cook, C. B. Operating costs of electric industrial trucks and tractors (D), MH-50-3
Cooke, Harte. Cooperative Diesel-engine research, OGP-50-9
Diesel engines for locomotive (D), OGP-50-4
Diesel-fuel-oil specifications (D), OGP-50-10
Cooling curves of tin-base metals, MSP-50-11(15)
of aircraft engines by air and water, AER-50(17)
of brick, FSP-50-11(82)
Cooperative study, MAN-50-11(5)
Coordinating wage incentives and production control, MAN-50-8
Copper and smoke damage, FSP-50-75(216, 220)
-antimony-tin system, MSP-50-11(13)
effect on aluminum alloys, AER-50-7(3-6)
tubes, extruded, MSP-50-9
Corcoran, J. J. Electric interlocking system (D), RR-50-10
Correction in manufacture, MAN-50-16(16-17)
Correspondence school, MAN-50-14(2, 5-6)
Corrosion, boiler, FSP-50-46(222-223)
definition, FSP-50-46(218)
elimination in boiler auxiliaries, FSP-50-58 in continuous blowdown, FSP-50-46(217)
Cost accounting of electric industrial trucks, MH-50-3
accounting of jigs and fixtures, MSP-50-12 (29-30)

Cost (*continued*)
accounting of machine-tool repairs and replacement, MSP-50-13(34)
data, MAN-50-2(10-11)
estimates for airways, AER-50-14(55)
investment, figures on capacity basis, FSP-50-71(185)
of living related to cost of production, MH-50-7(9)
of oil, FSP-50-67(144)
segregation, MAN-50-5a(31)
ultimate unit, MAN-50-10(67, 75)
in manufacture, MAN-50-1(5)
Cotton padder, simplifying operation of, TEX-50-1
padder, actual running time of, TEX-50-1(6)
padder improvements, results of, TEX-50-1(5-6)
padder, increasing production of, TEX-50-1
padder, installing improvements machine by machine, TEX-50-1(3-5)
padder, wage incentive on, TEX-50-1(4-5)
Cottonwood tree in State of Washington, WDI-50-7(4)
Cottrell dust collector performance, FSP-50-59(86)
dust precipitator, FSP-50-59(83-84)
Counter, electric, on conveyor, MH-50-2(4)
COWING, JOHN A. Problems and methods in smoke-abatement work (D), FSP-50-77
COX, C. E. Diesel-fuel-oil specifications (D), OGP-50-10
COX, EDWIN R. General heat-transfer formulas for conduction and convection, PET-50-2
COYE, C. W. Engineering characteristics of plywood (D), WDI-50-13
CRAIG, OLLISON. Burning characteristics of different coals (D), FSP-50-52
Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
Stoker advantages and disadvantages (D), FSP-50-65
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
CRAIN, J. J. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
CRANE, J. B. High-pressure steam boilers (D), FSP-50-32
The high cost of fuel saving (D), FSP-50-4
Crane, cranes:
accessibility for repair and lubrication, MH-50-5(6)
acid-proof electrical equipment for, MH-50-1(1)
balanced level luffing, power saving in, MH-50-5(3-5)
cargo, MH-50-5
cargo, types and selections of, MH-50-5
cargo, types of, MH-50-5
counterweight safety, MH-50-5(6)
European compared with American, MH-50-5(6)
fouling of boom in, MH-50-5(1)
hooks, safety, MH-50-5(6)
level luffing, MH-50-5
needs frequent inspection, MH-50-5(6)
on wharf vs. ship's winches, MH-50-5(2)
progress, MH-50-1(1)
railroad, with steam-air jets to reduce smoke, FSP-50-21(166)
safety, MH-50-5(6)
simple electrical equipment for, MH-50-1(1)
transporter, MH-50-5(5)
Crankshaft, twisting test of, APM-50-8(39)
Crawford Avenue station compared with Calumet, FSP-50-31(44-46)
Avenue station, high steam pressure and temperature at, FSP-50-31
CRAWFORD, JOHN G. Railway practice in utilization and conservation of coal (D), FSP-50-74
CRAWFORD, JOHN G. (*continued*)
Selection and use of fuels in locomotive practice (D), FSP-50-69
The relative value in locomotive service of different sizes of the same coals, FSP-50-73
Creep of metals, FSP-50-32(51-52); FSP-50-50(263-264); FSP-50-50(279-280)
Critical-pressure generation of steam, FSP-50-30(38-39)
pressure in nozzle, APM-50-3(5, 6)
speed affected by magnetic field in electrical machinery, APM-50-16(59)
CROCKER, SABIN. Stresses and reactions in expansion pipe bends (D), FSP-50-49
CROCKETT, C. B. Marine terminal operation (D), MH-50-11
Operating costs of electric industrial trucks and tractors, MH-50-3
CROSS, B. J. and KREISINGER, HENRY. Burning characteristics of different coals, FSP-50-52
CROSS, C. N. Efficiencies of Otto and Diesel engines (D), OGP-50-5
Crystobalite, expansion of, FSP-50-8(57)
CRYTSER, C. A. Wood-burning furnaces (D), WDI-50-16B
CULLEN, R. J. Electric interlocking system, RR-50-10
CURRAN, H. M. Our need for knowledge of tropical timbers (D), WDI-50-10
The need of research on tropical woods before marketing them (D), WDI-50-9
CURTIS, MYRON S. The economics of machine-tool replacement, MSP-50-5
CUSHING, H. M. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station, FSP-50-10
Progress in central-station use of pulverized coal (D), FSP-50-71
Some factors in furnace design for high capacity (D), FSP-50-78
Some fundamental considerations in the design of boiler furnaces (D), FSP-50-39
Customer, complaints of, MAN-50-7(47)
CUTLER, F. G. Combination firing of blast-furnace gas and pulverized coal, FSP-50-35
Cut-off adjustment for the locomotive, back pressure and, RR-50-5
CUTTEN, L. H. Wood-burning furnaces (D), WDI-50-16B
Cutter life in hydraulic feed MSP-50-4(47-49)
Cutting-blade research, WDI-50-1(1)
tool—see tool, cutting
Cycle efficiency of high-pressure steam, FSP-50-29(28)
Cycloidal propeller blades, size, shape, and performance of, AER-50-12(31-34)
propeller compared with screw propeller, AER-50-12(30)
propeller, drag losses of, AER-50-12(34-35)
propeller experiments, AER-50-12(38)
propeller for airship, AER-50-20(19-20)
propeller lift greater than fixed wing lift, AER-50-12(44)
propeller, improved streamlines with, AER-50-12(40)
propeller, load distribution in, AER-50-12(36)
propellers, advantages of, AER-50-12(44)
propellers, design of, AER-50-12(38)
propellers, energy losses in, AER-50-12(34)
propellers for shallow draft boats, AER-50-12(46)
propellers, length of blades for, AER-50-12(46)
propellers, multi-blade, AER-50-12(29)
propellers, noiseless operation of, AER-50-12(38)
propellers, pitch of, AER-50-12(34-35)
propellers, rolling prevented by, AER-50-12(35)
propellers, shifting axis of symmetry of, AER-50-12(29-31)
Cycloidal (*continued*)
propellers, stresses in, AER-50-12(35-38)
propellers, three-dimension control of, AER-50-12(38)
propellers, wind-tunnel tests of, AER-50-12(45)
propulsion, advantages of, AER-50-12(41)
propulsion analyzed, AER-50-12(25-37)
propulsion applied to aircraft, AER-50-12
propulsion, efficiency of, AER-50-12(28-29)
propulsion eliminates ballasting of dirigibles, AER-50-12(40)
propulsion gives easy control of dirigibles, AER-50-12(40)
propulsion for heavier-than-air craft, AER-50-12(41-45)
propulsion of lighter-than-air craft, AER-50-12(38-41)
propulsion, positive and negative slip in, AER-50-12(26-28)
Cylinder efficiency, RR-50-4(6-7)
heads for aircraft engines, AER-50-7(3-6)
thin, theory of, IS-50-3(8-9)
locomotive, high steam pressures in, RR-50-4

D

DALAND, ELLIOT. Discussion of oleo gears, AER-50-3(10-11)
Dam, Stevenson arch, investigation, HYD-50-1(4)
Damping by hysteresis, APM-50-8(53)
coefficients for propellers, APM-50-8(53)
due to oil film, APM-50-8(54)
due to slippage of members, APM-50-8(54),
of marine propeller APM-50-8(52-53)
of vibrations, APM-50-7
Dangers in airships, AER-50-4(2)
DANCKWORTT, T. B. and REYNOLDS, M. S. Diesel-fuel-oil specifications (D), OGP-50-10
Daniel Guggenheim safe aircraft competition, AER-50-1(4)
DANIELS, F. H. The characteristics of modern stokers, FSP-50-15
The economics of air-preheater applications (D), FSP-50-16
Progress in central-station use of pulverized coal (D), FSP-50-71
Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57
Stoker advantages and disadvantages (D), FSP-50-65
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
DANKS, A. C. Recent developments and improvements in the baffling of vertical boilers, FSP-50-57
DAUGHERTY, R. L. Computation of the tail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
DAVEY, H. T. Centrifugal pumps, HYD-50-4
DAVIDSON, M. W. Friction in dredge pipes (D), HYD-50-7
DAVIS, A. L. A study of tin-base bearing metals (D), MSP-50-11
DAVIS, R. C. Determination of minimum-cost purchase quantities, MAN-50-6
Day work in porcelain factory, MAN-50-12
Deaeration of feedwater to prevent corrosion, FSP-50-41(188)
Deaerator, FSP-50-58(65)
Decay of tropical wood, WDI-50-9(7)
Deconcentrator, FSP-50-46(215-217)
Deepwater plant compared with Toronto station, FSP-50-40(177)
plant, high-pressure, FSP-50-40(175)
Defective product problems, MAN-50-2(12)

De Fries, Walter. Progress toward direct firing of boilers with producer gas (D), FSP-50-54
Degree-day applicable to all forms of heating, PET-50-4(5-6)
DeLeeuw, A. L. Symposium on shop-equipment maintenance (D), MSP-50-3
The development of machine tools from a user's viewpoint (D), MSP-50-2
Demand curves, MAN-50-10(73-75)
Den Hartog, J. P. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
Vibration of frames of electrical machines, APM-50-6; APM-50-11
and Ormondroyd, J. The theory of the dynamic vibration absorber, APM-50-7
Department of Commerce, AER-50-13(49)
of Commerce, aeronautics branch, AER-50-1 (6)
of Commerce, air regulations, AER-50-1(6)
quota report, MAN-50-5a(33)
store, motion study in, MAN-50-17A
Depreciation of trucks and tractors, MH-50-3
Desk, mass production of, WDI-50-11
of wood and steel to facilitate mass production, WDI-50-11(22-23)
Deterioration, MAN-50-10(73)
Deutsch, Z. G. Combustion and heat transfer (D), FSP-50-3
Diaphragm for steam pressure, FSP-50-79(294)
Dick, M. Everett. Automatic production of small wood parts (D), WDI-50-15
Diehl, Walter S. Cycloidal propulsion applied to aircraft (D), AER-50-12
Diemer, Hugo. Production control in a wrought-brass mill (D), MAN-50-4
Diesel and Otto cycles, OGP-50-5(19, 21)
cycle defined, OGP-50-5(1-2)
Diesel engine, engines—see also oil engines:
engine accessories, OGP-50-1(2)
engine, after dribbling of, OGP-50-1(3); OGP-50-3(6)
engine, airless-injection, OGP-50-8(10, 11-14)
engine, airless-injection engine better name for, OGP-50-2(5)
engine and orifice coefficients, OGP-50-1(3)
engine and petroleum industry, OGP-50-9 (31)
engine and public utilities, OGP-50-14
engine ash, OGP-50-10(43)
engine, automotive, OGP-50-8(12-13, 14)
engine, automotive, progress, OGP-50-1(1-2)
engine auxiliaries in hydroelectric plants, OGP-50-11(58)
engine bibliography, OGP-50-1(4-5)
engine carbonization, OGP-50-10(45)
engine combustion chamber, OGP-50-8(18)
engine, consciousness, education to, OGP-50-14(72)
engine, continuous production of, OGP-50-1 (2)
data, international, OGP-50-8(10-11)
engine cost reduction through specialization, OGP-50-13
engine costs, OGP-50-11(62)
engine design to suit standard fuel, OGP-50-10(45)
engine design trends, OGP-50-1(2-3)
engine developments in Europe, OGP-50-8
engine, double-acting, OGP-50-8(18-20)
engine, earliest types, OGP-50-8(9-10)
engine economics, OGP-50-14(73)
engine economy, OGP-50-10(44)
engine efficiency, OGP-50-2(6)
engine efficiency compared with Otto, OGP-50-5
engine floor space, OGP-50-11(56)
engine for aircraft, OGP-50-1(1-2); OGP-50-9(30-31)
engine for auxiliary power-plant work, OGP-50-11(56-57)
engine for dredges, OGP-50-9(30)
Diesel engine, engines (*continued*)
engine for locomotives, OGP-50-4
See also locomotive, Diesel
engine for oil tanker, PET-50-1(6)
engine for peak power, OGP-50-1(2)
engine for rail-car, RR-50-1(4)
engine fuel, OGP-50-9(30)
engine fuel consumption, OGP-50-2(6)
engine fuel pump, OGP-50-2(1, 3)—see also injector; injection
engine, gas constants, OGP-50-5(2, 7, 9)
engine generator stations, cost of, OGP-50-11 (55-56)
engine, giant installations, OGP-50-1(2)
engine, governmental aid, OGP-50-9(31)
engine, high injection pressure, OGP-50-2(5)
engine, high-speed, combustion chambers for, tests and results, OGP-50-2
engine, high-speed, data, OGP-50-2(6)
engine, ideal efficiency, OGP-50-5(4-5)
engine, ignition lag in, OGP-50-2(1)
engine indicator card, APM-50-8(26)
engine, industrial installations, OGP-50-11 (59)
engine industry needs of, OGP-50-1(3-4)
engine injector performance under various conditions, OGP-50-3
engine injection, turbulence of, OGP-50-2(6)
engine in power stations, OGP-50-8(20-21)
engine in pumping station, OGP-50-8(19)
engine, large, field for, OGP-50-11
engine, large, users of, OGP-50-11(53)
engine, lubrication, OGP-50-9(29)
engine, marine, OGP-50-8(21-25); OGP-50-11(54)
engine, marine, growth of, OGP-50-10(37)
engine, marine, reversible, OGP-50-9(29)
engine, mean effective pressures, OGP-50-5 (10)
engine, need for standard of comparison for, OGP-50-5(10-11)
engine needs good valve, OGP-50-3(8)
engine noise, OGP-50-11(61)
engine not cleanly, OGP-50-8(16)
engine, oil-spray investigations, OGP-50-6
engine, oil spray motion pictures, OGP-50-3
engine oil spray, visual observation, OGP-50-3(7-9)
engine, oil spray photography for, OGP-50-3(2)
engine performance, OGP-50-5(11-13)
engine, precombustion chamber, OGP-50-8 (11)
engine production in United States, OGP-50-1(4)
engine, proposed rating for, OGP-50-5(7)
engine research, OGP-50-1(3); OGP-50-9
engine safety in aircraft, OGP-50-3(7)
engine salesmanship, OGP-50-11(59, 62)
engine salesmanship sometimes unethical, OGP-50-14(74)
engine should use cheaper fuel, OGP-50-10 (48)
engine specialization, OGP-50-13
engine—steam turbine comparisons, OGP-50-11(57)
engine—synchronous condenser installation, OGP-50-11(53, 61)
engine, suitable districts for, OGP-50-11
engine test apparatus, OGP-50-2(1)
engine, thermodynamics, OGP-50-5
engine to extend public utilities service, OGP-50-14(73)
engine torsional vibration, APM-50-8; APM-50-14
engine twisting-moment curves, APM-50-8 (26)
engine, two-cycle vs. four-cycle, OGP-50-1 (2-3)
engine uses, OGP-50-9(30)
engine, variable specific heat of gas in, OGP-50-5(14, 16, 17, 19, 20, 22)
engine vs. oil-fired boiler, OGP-50-11(55)
Diesel engine, engines (*continued*)
engine vibration—see vibration
engine, waste-heat utilization, OGP-50-14 (74)
engine weight, OGP-50-2(6)
engine weight reduction by increase of speed, OGP-50-2(1)
engine with precombustion chamber, OGP-50-10(44)
engine with quartz observation windows, OGP-50-3(6)
engine with supercharger, data and performance, OGP-50-8(16-18)
engine with Texrope drive, OGP-50-11(61)
Diesel fuel atomization, OGP-50-10(44)
fuel cleaning, OGP-50-10(48)
fuel flash point, OGP-50-10
fuel heating, OGP-50-10(48)
fuel heating value, OGP-50-10(46-47, 49)
fuel, heavy, experiments, OGP-50-10(47)
fuel impurities, OGP-50-10(42)
fuel injector manufacture, OGP-50-7
fuel injector research, OGP-50-7
fuel, low viscosity needed for ships, OGP-50-10(46)
fuel, navy dept. specifications, OGP-50-10 (39-40)
fuel, Pacific Coast, OGP-50-10(43-45)
fuel produced by cracking, OGP-50-10(47)
fuel properties, OGP-50-10(42-43)
fuel, Shipping Board tests, OGP-50-10(40)
fuel should be standardized, OGP-50-10
fuel, specific heats of, OGP-50-2(7)
fuel specifications, OGP-50-10
fuel spray studies—see oil spray
fuel, sulphur in, OGP-50-10
fuel tank must be clean, OGP-50-10(47)
fuel tanks, heating of, OGP-50-10(43)
fuel viscosity, OGP-50-10(49)
fuel, viscosity related to surface tension, OGP-50-10(47)
fuel, viscous, burnt with small charge of superior fuel, OGP-50-10(41)
injection, OGP-50-8(20, 24); OGP-50-9 (29, 30); OGP-50-10(42-45)
injection developments for heavy oils, OGP-50-8(12)
injector—see injector
locomotive—see locomotive, Diesel
oil specifications, OGP-50-10
oil-spray, desirable reach of, OGP-50-9(33)
oil-spray photographs, OGP-50-9(32-33)
oil-spray research, OGP-50-12
-Otto cycle for high speed, OGP-50-2(1-2)
power plant, private, vs. central station, OGP-50-11(59-60)
progress, OGP-50-9
railcar, OGP-50-8(12, 13, 14)
tractor, OGP-50-8(13)
vs. steam, OGP-50-11(62-63)
vs. steam costs, OGP-50-10(47-48)
Die casting in electrical industry, MSP-50-18(26)
Dipterocarp, useful tropical wood, WDI-50-9(8)
Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station, FSP-50-10
steaming at locomotive terminals, FSP-50-19(154-156)
Dirt samples for vacuum cleaner tests, MAN-50-7(49)
Discharge angles, effect of on centrifugal fan, APM-50-5(4-5)
Discipline controls expense, MAN-50-9(57)
Disk, rotating, shrink pressure in, APM-50-10(5)
rotating, stresses in, APM-50-10; APM-50-16(63)
Distribution cost and plant location, MAN-50-15 (9)
-expense schedule, MAN-50-5a(36)
Divine, Bradford H. The prerequisites of successful polishing, MSP-50-6
Dock should be designed for ship, MH-50-11(1)

Dock to warehouse trucking, MH-50-11(3)
DOELLING, L. K. Diesel-fuel-oil specifications (D), OGP-50-10
DOMONOSKE, ARTHUR B. Manufacturing and wage-payment methods as practiced by the Hall-Scott Motor Car Company (D), MAN-50-16
Donath method for stress in rotating disk, APM-50-10(1)
DONNELL, L. H. Strength of steel columns (D), APM-50-9
DOW, ALEX. Some factors in furnace design for high capacity (D), FSP-50-78
Some operating data of large steam generating units (D), FSP-50-34
DOW, HERBERT W. The Diesel engine and public utilities (D), OGP-50-14
Draft loss reduced by cross-baffle, FSP-50-57(54)
should be brought to ship made up, MH-50-11(2, 3)
Dredging, centrifugal pump for, HYD-50-4(1)
DRIESSEN, M. G. A simplified method of determining stresses in rotating disks, APM-50-10
DREWRY, M. K. Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Progress in central-station use of pulverized coal (D), FSP-50-71
Drilling machine, automatic, has increased capacity, MSP-50-2(10)
machine, motor-driven, MSP-50-2(9-11)
machine, multiple, hydraulic feed, MSP-50-4(50-53)
machine, way, hydraulic feed, MSP-50-4 (51-53)
Dry-quenching coke process, FSP-50-17
-vacuum pump, reciprocating, FSP-50-43
DU BRUL, E. F. Some practices in the use of machine tools in the electrical industry (D), MSP-50-18
Symposium on hydraulic feeds for machine tools (D), MSP-50-4
Symposium on shop-equipment maintenance (D), MSP-50-3
The development of machine tools from a user's viewpoint (D), MSP-50-2
Ductility, IS-50-3(8-9)
DUNELL, BERNARD. Cargo cranes—types available, factors governing selection, and latest developments, MH-50-5
DUNTON, O. M. Engineering characteristics of plywood (D), WDI-50-13
Lacquer and varnish films (D), WDI-50-4
DUPRIEST, JOHN R., and POLHEMUS, JAMES H. Friction in dredge pipes, HYD-50-7
Duralumin for aircraft, AER-50-1(6)
for airplane propellers, AER-50-25
results of corrosion tests, AER-50-4(4)
utilization in airships, AER-50-4(4)
weight per cubic inch, AER-50-25(59)
DURLEY, R. J. Air flow research, APM-50-3(11)
Dust, carbon in, FSP-50-59(85)
cement, pays for collection, FSP-50-59(85)
-collecting system for polishing works, MSP-50-6(70)
collection economics, FSP-50-59(84)
collection in stacks of pulverized-fuel installations, FSP-50-59
collector, cindertrap, FSP-50-59(81)
collector, Cottrell, FSP-50-59(83-84)
collector, cyclone, FSP-50-59(84)
collector, mesh type, FSP-50-59(81-83)
collector performance, FSP-50-59(86)
collector power consumption, FSP-50-59(84)
collector, Sirocco, FSP-50-59(79-80)
collector tests, FSP-50-59
collector, Thermix stack, FSP-50-59(84)
collector, types of, FSP-50-59
collector, Vorticose, FSP-50-59(80-81)
content of atmosphere mapped, St. Louis, FSP-50-20(161)
Dust (*continued*)
copper, effect on livestock, FSP-50-59(85)
count in St. Louis, FSP-50-20(160)
counter for air, FSP-50-20(159)
lawsuits, FSP-50-59(84-85)
tests, laboratory vs. field, FSP-50-59(85)
Dye, coal-tar, for printing ink, PI-50-4(1-2)
penetration test of porcelain, MAN-50-12 (14)
Dynamic balance, APM-50-16(60)
vibration absorber, theory of, APM-50-7
Dynamometer for automobile testing, MAN-50-16(14)
Dynamometer, ball-bearing for model windmill test, AER-50-6(6)
Sprague, for aeronautical work, AER-50-2(4)
DYKSTRA, J. E. Coordinating wage incentives and production control (D), MAN-50-3

E

East Peoria station using powdered Illinois coal, refractories problems, FSP-50-38
EATON, G. M. Heating and ventilating of passenger car (D), RR-50-6
Vibration of bridges (D), RR-50-9
EBERHARDT, H. J. High-speed gearing (D), MSP-50-16
Economic production quantities, MAN-50-10
of air-preheater applications, FSP-50-16
of coal carbonization in the United States, FSP-50-27
of dry-quenching coke by the Sulzer process, FSP-50-17
of machine-tool replacement, the, MSP-50-5
of transatlantic flying, AER-50-20
Economizer, FSP-50-9(60); FSP-50-16(123); FSP-50-41(188)
air-water, FSP-50-16(143)
and boiler efficiency, FSP-50-40(167)
at Crawford Avenue station, FSP-50-31(45)
calculations, FSP-50-16(132-138)
compared with air preheater, FSP-50-16 (143)
corrosion, FSP-50-16(143)
effect of, on flue gas temperature, FSP-50-16 (136)
fuel, FSP-50-4(25)
selection, FSP-50-16(141)
trend toward, FSP-50-34(99)
vs. air preheater, FSP-50-30(37); FSP-50-34(101)
Economy of airships, AER-50-4(2)
of electric interlocking, RR-50-10(5)
EDDY, HARRISON P. The value of water in textile mills for purposes other than water power (D), TEX-50-2
Edgar station, high-pressure steam at, FSP-50-30
Education control over expense, MAN-50-9(57)
cooperative, in railroad engineering, RR-50-1 (4)
for smoke abatement, FSP-50-21(166); FSP-50-22(171-172)
EDWARDS, M. R. The control of quality in a manufactured product (D), MAN-50-13
Effect of atmospheric smoke pollution, the, FSP-50-24
of industrial wastes on feedwater problems and condenser operation, FSP-50-46
Efficiencies of Otto and Diesel engines, OGP-50-5
Efficiency of hydraulic feed, MSP-50-4(49)
of hydraulic feed for machine tools, MSP-50-4(34)
of power transmission by steam pipe, FSP-50-47(232)
thermal, FSP-50-26(9)
EIDMANN, FRANK L. Materials handling as an aid to production, MH-50-4
EINSTEIN, SOL. The development of machine tools from a user's viewpoint (D), MSP-50-2
EINSTEIN, SOL (*continued*)
Hydraulic feeding mechanism for milling machines symposium on hydraulic feeds for machine tools, MSP-50-4
EKSERGIAN, R. Diesel engines for locomotive (D), OGP-50-4
Stresses in the drive system of three-cylinder locomotives (D), APM-50-13
Vibration of frames of electrical machines (D), APM-50-6
High steam pressures in locomotive cylinders (D), RR-50-4
Elasticity, hydraulic vs. mech., MSP-50-4(55)
Electric drive, individual integral, MAN-50-16 (13)
furnace, FSP-50-55(39, 41)
generation, a new propeller-type high-speed windmill for, AER-50-6
industrial trucks and tractors, operating costs, MH-50-3
lamp maintenance, MSP-50-14(38)
motor drive, direct-connected, MSP-50-1(2)
motor maintenance, MSP-50-14(38)
oil pumps, PET-50-1(5)
power companies have poor rate schedules, OGP-50-11(60)
power from process steam, FSP-50-41(189, 191)
Electrical machine frame vibration, APM-50-11; APM-50-16(60)
machine, rotor length increase 1917–1927 APM-50-16(60)
machinery should be balanced after installation, APM-50-16(61)
machinery, vibration resonance should be avoided, APM-50-16(59)
rotating machinery, stress analysis in, APM-50-16
Electricity, generation of, by wind, AER-50-6(1)
increased use in home if rates are attractive, OGP-50-11(60, 61)
oil production, PET-50-1(2)
Electrification as fuel saver, FSP-50-4(23)
Electrolysis, definition, FSP-50-46(218)
Electrotyping accuracy, PI-50-7(21, 22, 23)
Elevator progress, MH-50-1(2)
ELLENWOOD, F. O. Efficiencies of Otto and Diesel engines, OGP-50-5
ELLIOTT, LOUIS. Some economic factors in power-station design (D), FSP-50-40
Some factors in furnace design for high capacity (D), FSP-50-78
ELLIS, O. W., and KARELITZ, G. B. A study of tin-base bearing metals, MSP-50-11
Mechanical properties of aluminum casting alloys at elevated temperatures (D), IS-50-8
A study of tin-base bearing metals, MSP-50-11
ELLMS, ROBERT W. Computation of the tail-water depth of the hydraulic jump in sloping flumes, HYD-50-5
ELMER, WILLIAM. A materials-handling and transport organization (D), MH-50-8
Can accident prevention be reduced to a science? (D), RR-50-3
Locomotive and freight-car utilization (D), RR-50-11
Locomotive sparks (D), RR-50-13
Vibration of bridges (D), RR-50-9
Emissivity, FSP-50-3(9, 11, 12, 14, 16-19)
Enameling oven, MH-50-10(26)
work, hangers for, MH-50-10(25, 26)
work, modern handling in, MH-50-10
Endurance limit of steel, APM-50-8(29, 48)
strength of weld, APM-50-12(18, 22)
Enduro metal tests, tensile and expansion at high temperatures, FSP-50-50(270-272)
Energy output of central stations, 1926–27 FSP-50-25(1)
release in furnace, FSP-50-78(272-275)

Energy (*continued*)
release of furnace affected by bare water wall, FSP-50-39(143-145)
Engine efficiency, OGP-50-5(7, 14)
two-cycle, gas injection in, PET-50-1(3-5)
Engineering analysis as applied to the selection of type and size of power-plant equipment, FSP-50-42
apprentice, course, MAN-50-11(5)
college curricula, MAN-50-11(7)
education, advantages of, MAN-50-11(7)
graduate, earnings of, RR-50-2(15)
graduate should be active socially, MAN-50-11(8)
promotion vs. administration promotion, RR-50-2(26)
success and high scholarship, MAN-50-11(7)
steam-power, progress in, FSP-50-26
Engines, aircraft oil, combustion in, AER-50-11
ENGLE, M. D. American fuel resources (D), FSP-50-2
Enthalpy, OGP-50-5(2)
Entrainment, FSP-50-45(209-210)
separator performance curves, FSP-50-45 (211)
separators, FSP-50-45(210)
Entropy diagram, RR-50-8(34)
Envelope opener, electric, MH-50-8(21)
EPPELSHEIMER, D. Sheet rolling (D), IS-50-9
Equipment, high-pressure, FSP-50-30(35-36)
Equipment loans, Daniel Guggenheim fund, for multi-engined airplanes, AER-50-1(2)
selection, FSP-50-63
size of high pressure vs. that of low, FSP-50-30(36)
ERNST, HANS. Hydraulic feeding mechanism for milling machines symposium on hydraulic feeds for machine tools, MSP-50-4
ERSKINE, R. K. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
ESTEP, T. G. Constitution and classification of coal (D), FSP-50-51
Eson vibration research, APM-50-7(17)
ESTER, T. G. Washing and preparation of coal (D), FSP-50-53
EVANS, C. J. Railway smoke abatement (D), FSP-50-19
EVANS, F. C. Efficiencies of Otto and Diesel engines, OGP-50-5
Evaporation, definition, FSP-50-46(218)
Evaporator, FSP-50-46(215)
and rapid circulation, FSP-50-45(208)
and scale, FSP-50-45(207, 209)
and water viscosity, FSP-50-45(207)
construction, FSP-50-45(207)
economy, FSP-50-45(211-212)
entraining in, FSP-50-45(209-210)
foam in, FSP-50-45(209-210)
for boiler-feed make up water, FSP-50-45
heat-transfer coefficients, FSP-50-45(207)
multiple-effect, FSP-50-45(207, 210-212)
scale removal, FSP-50-45(209)
single-effect compared with multiple, FSP-50-45(211)
temperature and heat transfer, FSP-50-45 (209)
tests, FSP-50-45(208)
types, FSP-50-45(208-209)
EVERY, W. F. Locomotive sparks (D), RR-50-13
Excess air and carbon dioxide, FSP-50-78(275)
air and combustion, FSP-50-52(20)
air, loss due to, FSP-50-55(39)
Executive, minor, should also be active socially, MAN-50-11(4)
minor, training of, MAN-50-11
Expansion indicators, electrical and mechanical, IS-50-3(3)
pipe bends, stresses and reactions in, FSP-50-49
test results at high temperatures, FSP-50-50 (267, 268, 269, 270, 271-280)
Expansion (*continued*)
tests of ferrous metals at high temperatures, FSP-50-50
Expense control, MAN-50-5a(31)
of airplane production, AER-50-15(58-59)
Experimental combustion chambers designed for high-speed Diesel engines, OGP-50-2
Extensometer, IS-50-8(26)
Extruded copper tubes, annealing, MSP-50-9(95)
copper tubes, manufacture and application of, MSP-50-9
Extrusion, cooling and lubrication, MSP-50-9
machine, MSP-50-9(95)
process, MSP-50-9
process, purity of copper for, MSP-50-9(94)
tool problem, MSP-50-9(95-96)
tool stressed to yield point, MSP-50-9(95)

F

Fabricated blades for cycloidal propellers, AER-50-12(36)
Factor of safety, APM-50-12
Factors governing selection, and latest developments, cargo cranes—types available, MH-50-5
in power-station design, some economic, FSP-50-40
Factory overhead, control, MAN-50-9
Facilities for research work in aeronautics in the United States, AER-50-2
FAIR, C. Increasing the production of woodworking machines by use of direct-connected alternating-current motors (D), WDI-50-2
Fairchild Caminez engine, development and technical aspects of, AER-50-9
FC-2 monoplane data, AER-50-1(2)
FALK, HAROLD S. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
FALKNER, JEFFERSON C. Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
FALES, E. N. A new propeller-type, high-speed windmill for electric generation, AER-50-6
Fan, centrifugal—see centrifugal fan
Fans for kilns, FSP-50-11
FARMER, HAROLD. Standard methods of water analysis, FSP-50-46
Fatigue and labor cost, MAN-50-1(4)
elimination, MAN-50-1(4)
of welded joint, APM-50-12(18)
Feed, automatic, drilling machine, MSP-50-2(9)
pump for Benson boiler, FSP-50-30(38-39), FSP-50-32(63)
Feedwater—see boiler feedwater
FERGUSON, ROBERT F. Systems of workman payment in porcelain factories (D), MAN-50-12
FERRIS, WALTER. Symposium on hydraulic feeds for machine tools, MSP-50-4
Ferrous metals—see under metals
metals, properties at elevated temperatures by tension and expansion, FSP-50-50
metals, short-time tensile tests and creep, FSP-50-50(263-264)
Fertilizer consumption, FSP-50-27(11)
Fiber waste in paper making, WDI-50-3(5)
FIELDNER, A. C. Constitution and classification of coal, FSP-50-51
The clinkering of coal ash as related to laboratory fusibility determinations, FSP-50-6
FIKE, C. A. A materials handling and transport organization, MH-50-8
Fillet, stress concentration at, APM-50-8(49)
Films, lacquer and varnish, WDI-50-4
Filter, definitions and types, FSP-50-46(218)
Filtration, definition, FSP-50-46(218)
Financial budget, MAN-50-5a(35)
FINN, S. M. Problems and methods in smoke-abatement work (D), FSP-50-77
Fir tree, State of Washington, WDI-50-7(3, 4)
Fire apparatus for airports, AER-50-8(6); AER-50-14(54)
attributed to locomotive sparks, RR-50-13
hazard low in oil engines, AER-50-11(18)
Firebrick plant, wage incentive in, MAN-50-12 (11)
Fire clay in furnace wall, FSP-50-64(121)
Fireproofing of airships, AER-50-4(2)
railroad right of way, RR-50-13(36-37)
Firing charts for smoke abatement, FSP-50-22 (172)
FISH, E. R. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
High-pressure steam boilers (D), FSP-50-32
The characteristics of modern boilers, FSP-50-9
FISHBOUGH, HARRY E. Damage due to smoke (D), FSP-50-75
FISHER, GEORGE C. Smoke-abatement methods used in Cleveland (D), FSP-50-21
Damage due to smoke (D), FSP-50-75
Problems and methods in smoke-abatement work (D), FSP-50-77
Fisk Street station, Chicago, FSP-50-40(177)
FITCH, HAROLD W. The apprenticeship-training program of the tri-city manufacturers (D) MAN-50-14
Heating and ventilating of passenger cars (D), RR-50-6
Vibration of bridges (D), RR-50-9
Fixtures—see also jigs and fixtures
building, MSP-50-12
design, MSP-50-12
welding, MSP-50-12(30)
FLACK, ALONZO. The determination of minimum-cost purchase quantities (D), MAN-50-6
FLAGG, RAY. Coordinating wage incentives and production control (D), MAN-50-3
FLAGG, SAMUEL B. Boiler-furnace refractories (D), FSP-50-64
Burning characteristics of different coals (D), FSP-50-52
Collecting the dust from chimney gases of powdered-fuel installations (D), FSP-50-59
Constitution and classification of coal (D), FSP-50-51
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Flame temperature and boiler capacity, FSP-50-39(148)
temperature and furnace volume, FSP-50-39(148)
FLANDERS, R. E. Production control in a wrought-brass mill (D), MAN-50-4
Symposium on hydraulic feeds for machine tools (D), MSP-50-4
Flash point, Diesel fuel, OGP-50-10
FLEMING, H. S. The need of research on tropical woods before marketing them (D), WDI-50-9
FLETCHER, F. RICHMOND. Economic production quantities, MAN-50-10
Fliegner, air-flow research, APM-50-3(8)
Flight of sea gulls, AER-50-12(27)
Flow meter, APM-50-3(1)
of air and gas, measurement with nozzles, APM-50-3
of heat through furnace hearths, FSP-50-37
sheet, porcelain factory, MAN-50-11
FLOWERS, A. E. An investigation of the performance of waste-packed armature bearings (D), APM-50-1(10)
Flue-dust sampling, FSP-50-59(78-79, 85)
-gas analysis, FSP-50-80(300-302)
-gas analysis corrected for SO_2, FSP-50-80 (300-302)

Flue (*continued*)
gas, CO_2 content, chart, FSP-50-80(301)
gas, solids carried in, FSP-50-38(132)
-gas temperature, FSP-50-10(72)
-gas temperature, FSP-50-40(168)
-gas temperature low with small tubes, FSP-50-57(62)
-gas temperature with economizer, FSP-50-16(136)
-gas temperatures, FSP-50-16(135, 140, 147)
Flues must be larger in mountain districts, FSP-50-21(169)
Flutter, wing, introduction to problem of, AER-50-10
Flying conditions, forecasts of, AER-50-1(6)
conditions in California, AER-50-13(49)
schedules, AER-50-14(55)
total, in United States during first six months of 1927, AER-50-1(5)
world total for 1926, AER-50-1(5)
Flywheel-generator combination, OGP-50-8(21)
Foam, FSP-50-45(209-210)
curves, FSP-50-45(210)
Foaming (see also priming), FSP-50-46(219-222)
and bubble formation, FSP-50-46(221)
definition, FSP-50-46(218)
and priming, inter-treatment, and behavior of zeolite-softened waters, FSP-50-46
Foamite for oil fire, FSP-50-68(148)
Fog caused by smoke, FSP-50-75(214-215)
FOISY, GEORGE A. The manufacture and application of extruded copper tubes, MSP-50-9
Food-products handling, MH-50-4(5)
Föppl vibration research, APM-50-7(17)
FORBES, R. G. Training minor executives in a rapidly growing organization (D), MAN-50-11
Forced-draft progress, FSP-50-26(8)
Forecast balance sheet, MAN-50-5a(35-36)
Forecast puts workers on mettle, MAN-50-5b (38)
Foreman, bulletin published for, MAN-50-11(3)
can increase production, MAN-50-16(16)
makes good practical instructor, MAN-50-14 (6, 7)
should be kept informed, MAN-50-11(3)
should be working, MAN-50-3(15, 19)
training, MSP-50-1(4)
training, MAN-50-14(6)
FORESMAN, R. A. The economics of air-preheater applications (D), FSP-50-16
Forest fire attributed to locomotive sparks, RR-50-13
-fire situation, WDI-50-10(15)
Products Laboratory, WDI-50-1(1)
Products Laboratory tests on native woods, WDI-50-9(5-6)
Forging, inspection of, MSP-50-15(1)
FORSTALL, A. E. The economics of coal carbonization in the United States (D), FSP-50-27
FORWARD, W. F. J. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
FOULK, C. W. Foaming and priming, internal-treatment, and behavior of zeolite-softened waters, FSP-50-46
Present tendency of boiler-water conditioning (D), FSP-50-58
Foundry materials handling, MH-50-1(4)
Foundry progress, IS-50-1(2)
Fractionation in petroleum industry, PET-50-5
Frahm stabilizing tanks for ships, APM-50-7 (14-15, 17)
Frames of electrical machines, vibration of, APM-50-6
FRANCE, A. W. Mechanical properties of aluminum casting alloys at elevated temperatures (D), IS-50-8
FRANKE, E. A. Rolling-mill lubrication (D), IS-50-11
FREEMAN, H. L. Budgetary control (D), MAN-50-5b
Freight-car condition, RR-50-11(11-13)
-car distribution, control of, RR-50-11(9)
-car dumper, MH-50-6
car, empty car-miles trend, RR-50-11(10)
-car friction, RR-50-12(27)
-car load compared with capacity, RR-50-11 (13)
car loaded with lumber, moisture content tests, WDI-50-8(1-2)
-car loading controlled by shipper, RR-50-11 (9)
-car location with respect to ownership, RR-50-11(10)
car-miles padded by empty car-miles, RR-50-11(10)
car papered to prevent moistening of lumber, WDI-50-8(3)
-car performance, RR-50-11(12)
-car performance trends, RR-50-11(9-11)
-car rebuilding, RR-50-11(12-13)
-car repair and maintenance, RR-50-11(12)
-car retarder, all-electric, RR-50-12(22-23)
car retarder, electropneumatic, RR-50-12 (22–23)
car retarders, costs, maintenance, performance, tracks, wiring, etc., RR-50-12
-car types, RR-50-11(12)
-car utilization, RR-50-11
L.C.L., and motor truck, RR-50-7
rates and plant location, MAN-50-15(9)
-train performance, RR-50-11(14)
FRENCH, G. E. Change in moisture content of lumber during trial shipment, WDI-50-8
FRENCH, H. J. Properties of ferrous metals at elevated temperatures as determined by short-time tensile and expansion tests (D), FSP-50-50
Frequency changer for woodworking, WDI-50-1(1); WDI-50-15(21)
changer, induction type, WDI-50-2(3)
changer output, WDI-50-2(4)
-speed curves of induction motor, WDI-50-2
FREUND, C. J. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
Friction, car, RR-50-12(27)
drive, MSP-50-7(82)
in centrifugal pump, HYD-50-4(2-3)
in rolling mills, IS-50-2(1)
loss in car-wheel, APM-50-4(1)
rolling, APM-50-4(1)
FRITSCHE, CARL B. A comparative examination of the airplane and the airship, AER-50-20
FROST, V. M. High-pressure steam at Edgar station (D), FSP-50-30
FRY, LAWFORD H. High steam pressure and condensing exhaust for locomotives (D), RR-50-8
High steam pressures in locomotive cylinders, RR-50-4
General heat-transfer formulas for conduction and convection (D), PET-50-2
Fuel—see also coal and oil
bountiful supply of, FSP-50-2(5)
-consumption analysis, degree-day method, PET-50-4
Diesel, OGP-50-9(30)
domestic, FSP-50-25(4)
domestic, situation, FSP-50-27(11-12)
economy of air-cooled engine, AER-50-17 (66)
economy of oil engines, AER-50-11(17)
economy on railroads, RR-50-1(1)
engineering college course, FSP-50-76(236)
for tunnel kilns, FSP-50-56
geological age of, FSP-50-52(11)
growing appreciation of, FSP-50-2(5)
handling in K.S.G. retort, FSP-50-28(19)
heating value compared with ultimate analysis, FSP-50-80(299-300)
Fuel (*continued*)
-injection engines, oil sprays for, study by means of high-speed motion pictures, OGP-50-3
-injection problems in high-speed oil engines, AER-50-18
-injection-system test equipment, AER-50-11 (21-22)
injection, velocity of, AER-50-18(1-4)
injector, AER-50-18(1-4)
injectors, difficulties in manufacture, AER-50-18(4)
liquid, FSP-50-13
liquid, reserves, FSP-50-2(5-6)
moisture in, loss due to, FSP-50-80(306)
-oil, FSP-50-13
-oil consumption by states, OGP-50-11(55)
oil economics, FSP-50-12(96)
oil for brick kiln, FSP-50-11(92)
oil for domestic water heating, PET-50-4(5)
oil for house heating, PET-50-4
oil for marine service, FSP-50-67
oil, peak-delivery loads, PET-50-4(4)
-oil supply station location, PET-50-4(4-5)
oil, tank wagon business, PET-50-4(1)
pump, oil-engine, AER-50-18(1); AER-50-23(46)
rate, locomotives, RR-50-4(9-11)
ratio for classifying coal, FSP-50-51(2-3)
research, FSP-50-25(6)
resources, American, FSP-50-2
saving in terra cotta plant, FSP-50-4(26)
-saving program, FSP-50-68(154)
saving, high cost of, FSP-50-4
situation 100 years ago compared with now, FSP-50-1(1-2)
solid, main source of energy, FSP-50-2(6)
tax as fuel saver, FSP-50-4(24-25)
underwater combustion of, FSP-50-1(2, 3)
used in cent. stations, 1926–27, FSP-50-25(1)
utilization, foreign, FSP-50-25(4-6)
utilization, progress in 1927, FSP-50-25
value, maximum, from wood waste, WDI-50-16A and B
waste in open-hearth furnace, FSP-50-4(26)
Fuels, past and prospective, FSP-50-1
FUNK, NEVIN E. Higher steam pressures, FSP-50-29
The economics of coal carbonization in the United States (D), FSP-50-27
FUNSCH, E. C. The effect of atmospheric smoke pollution (D), FSP-50-24
Furnace air-gas ratio, FSP-50-16(139)
air, moisture in, calculations and charts, FSP-50-80(303-304, 308)
air supply calculations and charts, FSP-50-80 (302-303)
air supply, minimum, and ratio of dry flue gas, FSP-50-80(308)
air temperature, FSP-50-34(99)
ash, FSP-50-38(137-138)
ash viscosity, FSP-50-38(138-140)
auxiliaries, modern, FSP-50-78(275)
auxiliary drives, FSP-50-16(123)
baffling, wood waste, WDI-50-16B(31)
bagasse, WDI-50-16B(34)
basic open-hearth, air preheater for, IS-50-5 (7)
basic open-hearth, calculations of heat loss, FSP-50-36(109)
basic open-hearth, coal consumption, IS-50-5 (7, 8)
basic open-hearth, economics of pulverized coal for, FSP-50-36(109)
basic open-hearth, economy of pulverized coal in, IS-50-5(7)
basic open-hearth, heat-loss calculations, IS-50-5(7)
basic open-hearth, pulverized coal for, FSP-50-36; IS-50-5
basic open-hearth, pulverized coal replaces oil in, FSP-50-36(107)

3/30
621.05 Am3 v. 49-50 pt. 1 1927-28 Ref.
Duke

Furnace (*continued*)
basic open-hearth, rate of operation, IS-50-5 (6)
basic open-hearth, removable slag pockets, FSP-50-36(107); IS-50-5(5)
basic open-hearth, safety of, IS-50-5(7)
boiler, design, fundamental considerations in, FSP-50-39
boiler, refractories, data and tests, FSP-50-64
Cahokia, St. Louis, Mo., FSP-50-3(20)
carbon loss, FSP-50-78(283)
carbon monoxide and hydrogen in, FSP-50-38(137)
carburizing, recuperation in, FSP-50-55(38)
clinkering in, prevented by limestone, FSP-50-38(139-140)
coal-blast furnace gas, dirt and ash in, FSP-50-35(104)
combustion speed, FSP-50-38(136-137)
control, automatic, FSP-50-55(42)
critical point, FSP-50-78(268)
data, FSP-50-78(256)
design for high capacity, FSP-50-78
design fundamentals, FSP-50-39
design, pulverized coal, FSP-50-72
design research, FSP-50-25(6)
design, simple formulas for, FSP-50-3(20)
design, small, FSP-50-78(275)
dollar efficiency vs. thermal efficiency, FSP-40-78(271-272)
domestic, action of down-draft baffle in, FSP-50-23(177-180)
domestic, banking of, FSP-50-23(180-182)
domestic, booklet on firing, FSP-50-76(237)
domestic, coke education needed, FSP-50-76 (236-237)
domestic, down-draft, difficult to fire, FSP-50-76(239)
domestic, efficiency and smokeless devices for, FSP-50-76(233-236)
domestic, efficient firing of, FSP-50-76
domestic, methods of firing, FSP-50-76 (225–228)
domestic, new type down-draft, FSP-50-23 (181-182)
domestic, secondary air in, FSP-50-76(237)
domestic, should be designed according to city code, FSP-50-76(238)
domestic, smoke abatement in, FSP-50-23
domestic, smokeless devices for, FSP-50-76 (233-236)
domestic, smokeless firing of, FSP-50-76
domestic, testing of, FSP-50-76
domestic, with down-draft baffle, FSP-50-76 (226-233)
down-draft, FSP-50-77(246, 249-252)
draft for wood, WDI-50-16A(26)
effect of base water wall on energy release rate, FSP-50-39(143-145)
effect of excess air, FSP-50-39(145)
efficiency should equal that of turbine, FSP-50-78(272)
electric, FSP-50-55(39, 41)
equipment at Charles R. Huntley station, FSP-50-10(64-65)
excess air in, FSP-50-66(138)
feeding wood waste to, WDI-50-16B(32, 33)
firing methods, FSP-50-26(8)
flame and refractory isotherms, FSP-50-39 (145)
flame-distance factor, FSP-50-78(272-273, 279, 283)
flame isotherms, FSP-50-39(145-146, 152); FSP-50-78(273)
flame length, FSP-50-78(272-275)
flame temperature, FSP-50-78(280)
flame temperature affected by fraction cold, FSP-50-39(144)
flame travel, FSP-50-41(186)
for inferior coal, FSP-50-70(169-170)
fraction cold, FSP-50-39(141-143); FSP-50-78(256-260, 272-273)
fraction cold and heat-absorption rate, FSP-50-78(274)
gas composition with oil, FSP-50-81(315-316)
gas composition, temperature, and velocity, FSP-50-38(128-130)
gas sampling, FSP-50-38(125)
gas, sulphur content, FSP-50-38(131, 137); FSP-50-81(318)
gas temperature with oil, FSP-50-81(315-317)
glass-tank, FSP-50-55(40)
hearth and surface resistance to heat flow, FSP-50-37(114)
hearth, circular, equations and curves of heat flow for, FSP-50-37(111-115)
hearth, elliptical, heat-flow equations, FSP-50-37(115)
hearth, equivalent thickness of, FSP-50-37 (111)
hearth failure due to overheated concrete, FSP-50-37(122-123)
hearth, flow of heat through, FSP-50-37
hearth heat flow affected by water in ground, FSP-50-37(120)
hearth heat transfer takes weeks to reach equilibrium, FSP-50-37(111)
hearth insulation, FSP-50-37(120-121)
hearth, rectangular, heat flow equations, FSP-50-37(116-118)
hearth, semi-ventilation of, FSP-50-37(123)
hearth temperature variation with time, FSP-50-37(118-119)
hearth with long parallel sides, heat flow equations, FSP-50-37(115-116)
heat transfer in intermittent, FSP-50-37 (122)
heat transfer rate, FSP-50-78(269, 280, 283)
heavy-gage water tube superior in, FSP-50-78 (277, 283)
influence of fraction cold on total surface needed, FSP-50-39(142)
industrial, efficiency of, FSP-50-55
industrial, losses from, FSP-50-55
industrial, recuperation in, FSP-50-55(37-38, 40)
lining destruction, FSP-50-40(159)
loss due to combustion of hydrogen, FSP-50-80(307)
loss due to dry chimney gas, FSP-50-80(309)
loss due to incomplete combustion, FSP-50-80(310-311)
maintenance reduced by stoker firing, FSP-50-25(1)
needs fuel uniformity, FSP-50-55(40)
non-clinkering block, smoke of, FSP-50-77 (248)
of Ford Motor Company at River Rouge, FSP-50-3(20)
opening, heat loss through, FSP-50-55(38)
operation measured by rate duration curve, FSP-50-78(265, 268)
operation variables, FSP-50-66(141)
pulverized-coal compared with fuel bed, FSP-50-52(18-19)
pulverized-coal vs. stoker, FSP-50-52(23)
radiant-heat-absorbing surface of, FSP-50-30 (36-37)
rating and water circulation, FSP-50-78(275)
recuperative steel, FSP-50-55(40)
rotary, FSP-50-25(6)
safety, FSP-50-78(269-270)
secondary air in, FSP-50-38(137)
screw-feed, for wood waste, WDI-50-5(4)
shape and combustion, FSP-50-52(20)
size, FSP-50-10(75); FSP-50-70(171)
size, stoker-fired, FSP-50-70(165, 166-167)
slag with pulverized coal, FSP-50-66(138)
slagging, FSP-50-41(186, 192)
smoking of, at high rating, FSP-50-10(79)
stoker, FSP-50-78(265-266)
stoker-fired, FSP-50-25(1)
stoker-fired, merits of, FSP-50-34(97-98)
stokers in industrial plants, FSP-50-41 (187-188)
stoker problems, FSP-50-31(46)
stoker vs. pulverized-coal, FSP-50-34(96)
temperature and air preheater, FSP-50-78 (278-279)
temperature increased by preheated air, FSP-50-16(140)
temperature limited by excess air, FSP-50-78 (254)
temperature not uniform, FSP-50-78(282
testing, domestic, FSP-50-76
tests, domestic, with various fuels, FSP-50-76 (228-231)
2800-deg., FSP-50-40(178-179)
use of water walls in, FSP-50-15(117)
using wood waste, WDI-50-5(6)
various types, with pulverized coal, FSP-50-77(255)
volume and flame temperature, FSP-50-39 (148)
volume for oil firing, FSP-50-13(106-107)
volume for wood, WDI-50-16A(26)
volume in industrial plants, FSP-50-41 (185-187)
volume, wood-waste, WDI-50-16B(29-30)
wall, air-cooled, FSP-50-64(124, 125)
wall, arches in, FSP-50-64(124)
wall boxes, cast-iron, heat transfer through, FSP-50-70(167)
wall, cast iron for, FSP-50-70(167, 168)
wall, common brick bad for outside of, FSP-50-64(121)
wall, high, design of, FSP-50-64(121)
wall maintenance by cooling, FSP-50-10(78)
wall, monolithic, FSP-50-64(123)
wall placed to radiate to cold surface, FSP-50-64(122)
wall protected by frozen slag, FSP-50-78 (268, 276, 279)
wall protection around stoker, FSP-50-70 (166-167)
wall, slip joint in, FSP-50-64(122, 123)
-wall temperature curves, FSP-50-81(317-319)
-wall temperature gradient, FSP-50-55(38); FSP-50-78(274)
-wall temperature should equal ash fusing temperature, FSP-50-39(156)
-wall water circulation, FSP-50-78(283)
wall, water-cooled, FSP-50-64(118); FSP-50-65(130-131); FSP-50-70(167); FSP-50-72
wall, water cooled, and scale-forming water, FSP-50-78(270)
-wall water-cooled at clinker line, FSP-50-65 (129)
wall, water-cooled, circulation in, FSP-50-78 (281)
wall, water-cooled, function of, FSP-50-39 (141-143)
-wall, water-cooled, temperature gradients, FSP-50-78(266-267)
wall, water-cooled, water conditioning for, FSP-50-64(123)
walls, cooling with oil firing, FSP-50-13 (106, 107, 108-109)
warm-air, methods of firing, FSP-50-23 (175-177)
water-cooled, FSP-50-26(7); FSP-50-4(192); FSP-50-70(174)
water cooling for gas and oil fired, FSP-50-78 (263-265)
water-wall, FSP-50-30(37)
water-wall, base-tube, circulation, FSP-50-78 (274)
with air- or water-cooled walls, FSP-50-41 (186)
with carborundum walls, FSP-50-25(1)
with cast-iron blocks, FSP-50-78(260)
with fin tubes, FSP-50-78(255)

Furnace (*continued*)
with high rating at St. Louis, FSP-50-78 (276-277)
with high-setting, efficiency, FSP-50-78 (270-271)
with overfire air injection, FSP-50-25(1)
with small, high-velocity gas passage, FSP-50-52(22)
well-type, FSP-50-25(2-3)
well-type, at Sherman creek, FSP-50-10 (74, 77)
well-type, early experiments, FSP-50-10(74)
well-type for pulverized coal, FSP-50-10
wood-waste, blocks hogged for, WDI-50-16B (30-31, 34)
wood-waste, CO_2 in, WDI-50-16B(34-37)
wood-waste, economizer for, WDI-50-16B (35)
wood-waste, excess air avoided, WDI-50-16B (34, 35, 37)
wood-waste, explosions in, WDI-50-16A (27-28)
wood-waste, high setting for, WDI-50-16B (34)
wood-waste, high wall maintenance in WDI-50-16B(33, 36)
wood-waste, inefficient, remedies, WDI-50-16B(33)
wood-waste, needs instruments, WDI-50-16B(31, 35)
wood-waste, performance, WDI-50-16B(36)
wood-waste, predrying for, WDI-50-16B (35, 36)
wood-waste, screw feeder for, WDI-50-16B (35)
wood-waste, types of, WDI-50-16A and B
wood-waste with pulverized coal standby, WDI-50-16B(30-31)
Furniture industry, design for mass production in, WDI-50-11
finishing room, WDI-50-11(22-23)
made of plywood, WDI-50-13(2)
Furst, W. A. Increasing the production of woodworking machines by use of direct-connected alternating-current motors, WDI-50-2
Fusibility of coal ash compared with clinkering, FSP-50-6

G

Galloway, R. M. The development of hydraulic feeds on multiple-drilling machines, MSP-50-4
Gas, coke-oven, waste of, FSP-50-4(24)
constants for Diesel and Otto cycles, OGP-50-5(2-3)
high-pressure, distribution of, FSP-50-25(6)
engines, large, OGP-50-1(2)
engines vs. turbines as fuel savers, FSP-50-4 (23)
flow measurement with nozzles, APM-50-3
for tunnel kiln, FSP-50-56(44)
from coal, FSP-50-52(14-17); FSP-50-70 (172)
furnace, water-cooled, FSP-50-78(263-265)
injection in two-cycle engine, PET-50-1(3-5)
lift as applied to oil production, PET-50-3
lift compared with pumping, PET-50-3(21)
-lift limitations, PET-50-3(23)
-lift results, PET-50-3(22-23)
natural, FSP-50-25(4)
natural, as fuel, FSP-50-72(187)
-power engineering, progress in, OGP-50-1
pressure in pulverized-coal blast-furnace-gas boiler, FSP-50-35(104)
producer—see producer gas
producer agitation, FSP-50-12(98)
producer, automatic feed for, FSP-50-12 (97-98)
producer and water-gas generator practice, FSP-50-12(99)
Gas (*continued*)
producer, Chapman, FSP-50-12(102)
producer, flue cleaning, FSP-50-12(98-99)
producer for boiler heating, FSP-50-12(100)
producer, Kerpely, FSP-50-12(99-100)
-producer practice, progress in, FSP-50-12
producer, producer-boiler for, FSP-50-1(3)
-producer progress, FSP-50-12
-producer regulation, FSP-50-12(99)
-producer soot removal, FSP-50-12(99)
producer, types of, FSP-50-54(35)
producer, underfeed, FSP-50-54(34)
producer, uniform operation of, FSP-50-12
producer using charcoal, FSP-50-12(101)
producer water jacket, FSP-50-12(99)
-producer with automatic feed, FSP-50-12 (97-98)
recovery from K.S.G. carbonization process, FSP-50-28(20, 22)
temperature, average, FSP-50-3(13)
temperature in air preheater, FSP-50-39(142)
travel in tunnel kiln, FSP-50-56(44-50)
variable specific heat of, OGP-50-5(14, 16, 17, 19, 20, 22)
waste, causes loss in industrial furnaces, FSP-50-55(37)
water, automatic generator for, FSP-50-1(3)
Gasche, F. S. Air-flow research, APM-50-3(8)
Gasoline, containing hydrogen sulphide, and corrosion, PET-50-1(3)
dewaxing, centrifugal method, PET-50-1(8)
engine demands greater gasoline yield, PET-50-1(8)
evaporation in storage, PET-50-1(6)
from coal, Bergius process, PET-50-1(9)
natural, progress, PET-50-1(3-5)
mixed with crude oil, transportation of, PET-50-1(3)
plant cooling tower, PET-50-1(3-5)
plant spray pond, PET-50-1(3-5)
plant, superheated steam in, PET-50-1(3)
plant, water treatment in, Pet-50-1(3-4)
Seminole, PET-50-1(3)
yield from petroleum, PET-50-5(11)
Gates, R. M. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
Gathman, Monte B. Automatic production of small wood parts (D), WDI-50-15
Gauger, A. W. Application of powdered coal to small boilers of industrial plants (D), FSP-50-5
Gear, gears:
action, MSP-50-16(5)
alignment important, MSP-50-16(8-10)
design for even contact, MSP-50-16(13, 14)
efficiency, MSP-50-16(6)
frame, self-aligning, MSP-50-16(8, 10)
hobber, MSP-50-16(9-10)
hobber, accuracy of, MSP-50-16(11-13)
hobber, master wormwheel for, MSP-50-16 (10-12)
internal, can be shaved, MSP-50-17(22)
life, MSP-50-16(5, 10)
lubrication, high-speed, MSP-50-16(9-11)
metal fatigue, MSP-50-16(6)
noise, MSP-50-16(11-13)
noise and gear-case design, MSP-50-16(14)
oleo, for aircraft, AER-50-3
pitting is corrective, MSP-50-16(7)
-producing machines, accurate, MSP-50-1(3)
shaver cuts gear in direction of rolling contact, MSP-50-17(22)
shaver cutting blade and fixture, MSP-50-17 (21-22)
shaver, gears should be hobbed before finishing in, MSP-50-17(21)
shaver indexing mechanism, MSP-50-17(20)
shaving, internal, possible, MSP-50-17(22)
shaver, machining of master cam for, MSP-50-17(18-20)
shaver, master cam for, MSP-50-17(18-20)
Gear, gears (*continued*)
shaver needs no modified involute, MSP-50-17(22)
shaving process, Pratt and Whitney, MSP-50-17
teeth loading, MSP-50-16(7-8)
vibration, MSP-50-16(11-13)
wear, MSP-50-16(5-7)
wear due to pitting, MSP-50-16(6-7)
Geared units, MSP-50-16
Gearing efficiency, MSP-50-16(5)
high-speed, MSP-50-16
General heat transfer formulas for conduction and convection, PET-50-2
Generator field control, MH-50-6(1)
-flywheel combination, OGP-50-8(20-21)
Gerhardt, W. F. A comparative examination of the airplane and the airship (D), AER-50-20
German, A. J. Stresses and reactions in expansion pipe bends (D), FSP-50-49
The high cost of fuel saving (D), FSP-50-4
The K.S.G. process of low-temperature carbonization (D), FSP-50-28
The characteristics of modern stokers (D), FSP-50-15
Gibson, F. M. The Ruths steam accumulator (D), FSP-50-33
Gibson, Dr. Research on aluminum pistons, AER-50-7(2)
Gilbert, E. M. Some economic factors in power station design (D), FSP-50-40
Gilbreth clock, MAN-50-17B(27)
Gill, T. H. The need of research on tropical woods before marketing them (D), WDI-50-9
Gillette, J. C. Operating costs of electric industrial trucks and tractors (D), MH-50-3
Materials handling as an aid to production (D), MH-50-4
Glass-products handling, MH-50-4(5)
Glue for polishing wheels, MSP-50-6(73-74)
handling, MSP-50-6(73-74)
improvers, fake, MSP-50-6(74)
-joint strength, WDI-50-13(8)
types of, used in plywood, WDI-50-13(1-2)
Glued joint tests, AER-50-16(62)
joints, characteristics of, AER-50-16(61-62)
Glues used in aircraft, AER-50-16(61)
Gluing different woods, AER-50-16(63)
high pressure needed for, AER-50-16(64)
of metals, AER-50-16(64)
operation, AER-50-16(61-63)
technique of, AER-50-16(62)
wood in aircraft work, AER-50-16
Good judgment and equipment selection, FSP-50-63(111, 112, 113)
Goodenough, G. A. Efficiencies of Otto and Diesel engines (D), OGP-50-5
Gordon, C. W. Wood-burning furnaces (D), WDI-50-16B
Gotwals, C. S. Maintenance of shop equipment, MSP-50-3
Governor, Meyer, PI-50-2
Graeper, Walter W. Control of quality, MAN-50-7
Graff, S. D. Handling methods and equipment in a large mail-order house (D), MH-50-9
Graham, W. C. The high cost of fuel saving (D), FSP-50-4
Gratiot, F. W. Railway smoke abatement (D), FSP-50-19
Gravity correction factors, APM-50-3(10)
Greene, Carl F. An introduction to the problem of wing flutter, AER-50-10
An introduction to the problem of wing flutter, AER-50-10
Grinder with ball-bearing spindle, MSP-50 10 (3-4)
Grinding loss in paper making, WDI-50-3(5)
machine, MSP-50-5(62-63)

Grinding (*continued*)
machine, high-speed, with ball bearings, MSP-50-8(87-88)
machine, hydraulic feed, MSP-50-4(54)
-machine, internal, hyd. feed, MSP-50-4(42)
progress, MSP-50-1(2-3)
surface, in electrical industry, MSP-50-18 (25)
GROAT, B. F. Computation of the tail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5
GROFF, J. C. Diesel-fuel-oil specifications (D), OGP-50-10
GROTHE, OSCAR. Coordinating wage incentives and production control, MAN-50-8
Group system of payment, MH-50-8(16)
GRUNERT, A. E. Automatic combustion control (D), FSP-50-14
Guggenheim Aeronautic Laboratory, Stanford University, AER-50-2(4-5)
Aeronautical Laboratory, Massachusetts Institute of Technology, AER-50-2(2-3)
Graduate School of Aeronautics at California Institute of Technology, AER-50-2(5)
School of Aeronautics, New York University, AER-50-2(1)
GUILD, WALDO J. Hydraulics and modern machine-tool design, MSP-50-4
Gun turret, hydraulic, MSP-50-4(57)
Gyroscopic forces and shaft vibration, APM-50-16 (59)

H

HAGEMANN, G. E. Materials handling as an aid to production (D), MH-50-4
Modern handling methods of railroad transportation (D), MH-50-13
HALL, R. E. Present tendency of boiler-water conditioning, FSP-50-58
HALLETT, E. S. Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
HAMILTON, C. A. Wood-burning furnaces (D), WDI-50-16B
HAMILTON, CHESTER B. The Pratt & Whitney gear-shaving process (D), MSP-50-17
HAMILTON, K. D. Materials handling as an aid to production (D), MH-50-4
Shop-equipment maintenance (D), MSP-50-3(26)
Hammer mill for pulverizing coal, FSP-50-60 (88, 91)
-welded drum tested above elastic limit, FSP-50-32(53)
HAMMOND, A. M. Hydraulic feeds for machine tools (D), MSP-50-4(55)
HAMMOND, R. J. Car retarders, a recent development in railway-yard operation (D), RR-50-12
Handley Page airplane-wing slot, AER-50-1(4)
Handling methods and equipment in a large mail-order house, MH-50-9
methods in the woodworking industry, improvements in, WDI-50-5
of ashes, hydraulic, MH-50-12
of oil, ease of, FSP-50-67(144)
Hangars, airship hangars and airships, AER-50-4
electrically-operated doors for, AER-50-8(6)
maximum light for, AER-50-8(5)
HARDIGG, JEP C. The economics of air-preheater applications (D), FSP-50-16
Hardness, Brinell-test methods, MSP-50-11 (27-28)
definitions and types, FSP-50-46(218)
test, Rockwell, MSP-50-15(1)
of aluminum alloys, AER-50-7(4-6)
Hardwood—see also wood
abundance of, WDI-50-10(18)
Philippine, WDI-50-9(10); WDI-50-10(19)
time to bore holes in, WDI-50-14(15)
tropical, WDI-50-1(2)
tropical and U. S. compared, WDI-50-10(14)
HÄRLIN, AXEL. An accurate method for measuring steam, FSP-50-79
Harmonic analysis of air-compressor turning effort, APM-50-8(50)
analysis of vertical engine, APM-50-8(51)
HARPER, D. R. General heat-transfer formulas for conduction and convection (D), PET-50-2
HARRINGTON, JOSEPH. Automatic combustion control (D), FSP-50-14
Burning characteristics of different coals (D), FSP-50-52
Stoker advantages and disadvantages (D), FSP-50-65
HARTMAN, WILLIAM. Maintenance of machine equipment at National Cash Register Company's plant, MSP-50-3
HARTMANN, O. H. High-pressure steam boilers (D), FSP-50-32
HARZA, L. F. Computation of the tail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5
HASLAM, R. T. Combustion and heat transfer, FSP-50-3
Progress in fuel utilization in 1927, FSP-50-25
HAVILL, CLINTON H. Cycloidal propulsion applied to aircraft (D), AER-50-12
Head loss due to sudden expansion of pipe, HYD-50-2(5-6)
loss in centrifugal pump, HYD-50-3(12-14)
Health and smoke, FSP-50-24(185-186)
and smoke damage, FSP-50-75(218, 219, 220)
Heat balance of boiler, graphical computation, FSP-50-80
conductivity of aluminum alloys, AER-50-7 (4)
engine, ideal, OGP-50-5(21)
-entropy diagram, high-pressure steam, RR-50-8(34-35)
exchange in vapor condensation, PET-50-2 (19)
exchanger, FSP-50-41(188)
exchanger for continuous blowdown, FSP-50-58(69)
exchanger, tubular, for oil still, PET-50-1(7)
flow through furnace hearths, FSP-50-37
loss due to insufficient air, FSP-50-21(164)
loss in power transmission by steam pipe, FSP-50-47(232)
recovery in petroleum distillation, PET-50-5 (10-11)
release in industrial furnaces, FSP-50-41 (185-187)
release in industrial plants, FSP-50-41(191)
transfer affected by liquor-film coefficient, FSP-50-3(22)
transfer and combustion, FSP-50-3
-transfer bibliography, FSP-50-3(19)
-transfer formulas for conduction and convection, PET-50-2
transfer tests in wind tunnel, AER-50-2(4)
transmission affected by mean temperature and moisture, APM-50-15(52-53)
-treatment inspection, MSP-50-15(1)
treatment of aluminum alloys, AER-50-7 (3-6)
treatment of steel rail, IS-50-1(2)
-treatment progress, MSP-50-1(3)
unavailable, loss due to, FSP-50-55(38)
value of coal, FSP-50-51(6)
Heater, blast, uses extruded copper tubes, MSP-50-9(96)
Heating and ventilating of passenger cars, RR-50-6
HEFFERNAN, WILLIAM. The value of water in textile mills for purposes other than water power (D), TEX-50-2
HEINE, GREGOR H. Industrial-furnace efficiency, economic consideration (D), FSP-50-55
The flow of heat through furnace hearths (D), FSP-50-37
HEINE, GREGOR H. (*continued*)
The use of pulverized coal in basic open-hearth furnace (D), FSP-50-36; IS-50-5
HELSER, P. D. Systems of workman payment in porcelain factories (D), MAN-50-12
Hemlock tree in State of Washington, WDI-50-7 (3)
HENDRYX, D. B. The use of fuels in brick kilns (D), FSP-50-11
The use of fuels in tunnel kilns (D), FSP-50-56
HERNDON, E. L. The use of pulverized coal in basic open-hearth furnaces, FSP-50-36; IS-50-5
HERRON, JAMES H. Industrial-furnace efficiency, economic consideration (D), FSP-50-55.
High-pressure steam at Edgar station, FSP-50-30
-pressure steam boilers, FSP-50-32
pressure in oil refinery, FSP-50-30(39)
pressures in high-speed oil engines, AER-50-11(17)
-speed Diesel engines, experimental combustion chambers designed for, OGP-50-2
-speed motion pictures, study of oil sprays for fuel-injection engines by, OGP-50-3
-speed windmill for electric generation, a new propeller-type, AER-50-6
steam pressure and condensing exhaust for locomotive, RR-50-8
steam pressure and temperature at Crawford Avenue station, FSP-50-30
-temperature tests, electric furnace for, MSP-50-11(20)
-temperature tests of metals, heating-equipment design, IS-50-8(32-36)
-temperature tests of metals, furnace-control wiring, IS-50-8(35)
-temperature tests of metals, heating equipment, IS-50-8(36)
-temperature tests of metals, keeping metal at uniform temperature, IS-50-8(33-35)
-temperature tests of metals, need for long-time test, IS-50-8(37)
-temperature tests of metals, stress due to temperature fluctuation, IS-50-8(36)
Higher steam pressures, FSP-50-29
HILDEBRAND, R. Diesel engines for locomotives, OGP-50-4
HILDEBRANT, B. A. Handling methods and equipment in a large mail-order house (D), MH-50-9
HILL, H. D. Manufacture of Diesel fuel injectors (D), OGP-50-7
HILL, J. B., and KIEHL, E. P. Diesel-fuel-oil specifications (D), OGP-50-10
HIRES, J. E. Economic production quantities (D), MAN-50-10
HIRSHFELD, C. F. Some factors in furnace design for high capacity (D), FSP-50-78
Some operating data of large steam-generating units (D), FSP-50-34
Stoker advantages and disadvantages (D), FSP-50-65
and CARTER, W. A. Boiler-furnace refractories, FSP-50-64
HOAGLAND, F. O. The economics of machine-tool replacement (D), MSP-50-5
Shop-equipment policies in representative plants (D), MSP-50-7
The development of machine tools from a user's viewpoint (D), MSP-50-2
HOBART, H. N. Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66
HOBBS, J. C. Characteristics of modern stokers (D), FSP-50-15
Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57

HOCKLEY, C. C. The pulp and paper industry and the Northwest, WDI-50-3
HODGKINSON, FRANCIS. High-pressure steam at Edgar station (D), FSP-50-30
HODGSON, JOHN L. Measurement of flow of air and gas with nozzles (D), APM-50-3
HODSON, W. D. Rolling-mill lubrication (D), IS-50-11
HOEVEL, H. F. Compressive tests of balsa wood (D), WDI-50-12
Hoist-equipment progress, MH-50-1(1-2)
Holland station, details, FSP-50-40(170-172)
HOOD, O. P. American fuel resources, FSP-50-2
Hoover report on waste in industry, PI-50-3(21)
HOPKINS, G. J. Control of quality (D), MAN-50-7
Horn vibration research, APM-50-7(17)
Hot-box apparatus for insulation tests, APM-50-15(51-52)
-plate apparatus for insulation tests, APM-50-15(49-51)
pressing in electrical industry, MSP-50-18 (26)
-water storage tank vs. steam accumulator, FSP-50-33(79)
HOTTEL, H. C. Combustion and heat transfer, FSP-50-3
HOUSTON, H. A. Stresses in the drive system of three-cylinder locomotives (D), APM-50-13
HOVGAARD, WILLIAM. Stresses and reaction in expansion pipe bends (D), FSP-50-49
HOWELL, F. K. The economics of air-preheater applications (D), FSP-50-16
HOYLE, RAYMOND J. Our need for knowledge of tropical timbers (D), WDI-50-10
Human-effort measurement, Bedaux system, MAN-50-8
Humidity correction factors, APM-50-3(10)
HUMPTON, W. G., and MCKNIGHT, CHARLES. The manufacture of nickel-steel plate (D), IS-50-10
HUNT, WILLIAM F. Materials handling as an aid to production (D), MH-50-4
HUNT, WILSON P. Ball-bearing machine-tool spindles (D), MSP-50-10
HUNTER, JOHN. Burning characteristics of different coals (D), FSP-50-52
Damage due to smoke (D), FSP-50-75
Problems and methods in smoke-abatement work (D), FSP-50-77
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
Stoker advantages and disadvantages (D), FSP-50-65
The characteristics of modern boilers (D), FSP-50-9
HUNTER, JOHN A. Progress in steam-power engineering, FSP-50-26
HUNTER, SILAS. Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66
HUTCHINSON, ELY C. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
HUTCHINSON, F. P. The design and building of jigs and fixtures, MSP-50-12
HUXFORD, GEORGE T. Hydraulic feeds for machine tools (D), MSP-50-4(54)
Hydraulic chuck, MSP-50-4(57)
control of machine tools, MSP-50-2(11-12, 13)
efficiency of centrifugal pump, HYD-50-3 (1, 3-4, 5)
feed, MSP-50-5(62-63)
feed advantages, MSP-50-4(46-50)
feed, air elimination, MSP-50-4(46)
feed, careful piping needed, MSP-50-4(54)
feed, central system of, MSP-50-4(56)
feed characteristics, MSP-50-4
feed chatter increases tool life, MSP-50-4(55)
feed, control valve system, MSP-50-4(36)
feed, cylinder packing, MSP-50-4(53)
Hydraulic (*continued*)
feed durability, MSP-50-4(40)
feed economy, MSP-50-4(58)
feed elasticity, MSP-50-4(55)
feed expensive, MSP-50-4(56)
feed, flexibility of, MSP-50-4(46-47, 58)
feed for drilling machines, MSP-50-4(50-53)
feed for machine tools, MSP-50-4
feed for machine tools compared with mechanical feed, MSP-50-4
feed increases production, MSP-50-4(55-56)
feed limitations, MSP-50-4(56)
feed, multiple impeller system, MSP-50-4(38)
feed, need for standard oil for, MSP-50-4 (56-57)
feed must be kept free of air, MSP-50-4(42)
feed, oil leaks, MSP-50-4(55)
feed, operation of a plurality of, MSP-50-4 (36-37)
feed, pressure readings on, save tools, MSP-50-4(39)
feed, rapid reversing, MSP-50-4(54)
feed safety, MSP-50-4(49-50)
feed stability, MSP-50-4(58)
feed, seamless brass tubing for, MSP-50-4 (53)
feed standardization, MSP-50-4(52-53)
feed systems compared, MSP-50-4(39-41)
feed units, MSP-50-4(47-48)
feed, unit-system gives design flexibility, MSP-50-4(52-53)
feed vibration, advantages, MSP-50-4(39)
feed, vibrations of, MSP-50-4(55)
feeding mechanism for milling machines, MSP-50-4
jump and change of section, HYD-50-5(3-4)
jump at St. Francis dam failure, HYD-50-5 (9)
jump built to absorb energy, HYD-50-5(9)
jump formulas, need for derived rather than empirical, HYD-50-5(7-8)
jump not affected by path of center of mass, HYD-50-5(7-9)
jump tail-water depth calculations and tests, HYD-50-5
losses in a centrifugal pump, new method of separating, HYD-50-2
power vs. steam power, HYD-50-1(1)
reverse vs. electric for planer, MSP-50-4(57)
transmission for gun turrets, MSP-50-4(57)
transmission for machine tools, MSP-50-1(2)
tunnels, forcing concrete behind, HYD-50-1 (4)
turbine—see turbine, hydraulic
valve gear for airplane engine, AER-50-1(2)
wheel brakes for airplane, AER-50-1(2)
Hydraulics and machine-tool design, MSP-50-4 (41-42)
economic and political aspects, HYD-50-1(1)
progress, HYD-50-1
research in, HYD-50-1(4)
research in, with small-scale models, HYD-50-1(4)
Hydrocarbon unstable at furnace temperature, FSP-50-52(17)
Hydroelectric power combined with steam, HYD-50-1(1)
power vs. steam, HYD-50-1(1)
Hydro-power plants, automatic operation, HYD-50-1(3)
-power machinery—see turbine and turbine, hydraulic
-power machinery, Conowingo, HYD-50-1(2)
-power machinery, electric welding, HYD-50-1(3)
-power machinery improvements, HYD-50-1 (2-3)
properties, supreme court evaluation, HYD-50-1(1)
Hydrodynamic research, AER-50-2(5)
Hydrogen-ion concentration, FSP-50-46(223)
Hydrogen vs. helium for airships, AER-50-19 (6)
Hydrostatic tests, APM-50-12(23)
Hysteresis damping, APM-50-8(53)

I

Illumination and efficiency of labor, MAN-50-17A(24, 26)
and smoke, FSP-50-75(217)
of machine tools, MSP-50-2(14, 15)
Impact in centrifugal fan, APM-50-5(2)
of locomotive balance weights, RR-50-9 (54-55)
tube, APM-50-3(1, 3)
Incinerator smoke nuisance, FSP-50-21(168)
Index department for 3,000,000 customer records, MH-50-9(21)
Indicator card, compound locomotive, RR-50-4 (8)
diagram, high-pressure, RR-50-4(5)
for cylinder pressure, AER-50-11(20)
recording, for high pressures, OGP-50-3(8)
Induction-motor characteristics, WDI-50-2
Industrial management—see management
museums, MAN-50-1(6)
plants, application of powdered coal to small boilers of, FSP-50-5
power, high-pressure, FSP-50-30(38)
power, important, FSP-50-41(182)
power, improving power factor of, FSP-50-41 (183)
power-plant modernization, FSP-50-41
power plant, power factor in, FSP-50-41(190)
power progress, FSP-50-26(9)
power, purchase of, FSP-50-41(183)
processes, types of, MAN-50-10(66)
waste and boiler problems, FSP-50-46 (223-225)
waste literature, FSP-50-46(224-225)
Industry developments, MH-50-1(4-5)
economics of, MAN-50-1(2-3)
mechanization of, surplus labor from, MH-50-7(9)
INGELS, G. R. Control of factory overhead (D), MAN-50-9
INGERSOLL, L. R. The flow of heat through furnace hearths (D), FSP-50-37
Injection, oil-spray, OGP-50-6
system, Diesel-engine, types of, OGP-50-1(3)
Injector, Diesel, accuracy of, OGP-50-7(1)
Diesel, a specialty product, OGP-50-7(7, 8)
Diesel, assembly, OGP-50-7(4)
Diesel, corrosion, OGP-50-7(8)
Diesel, check valves, OGP-50-7(3)
Diesel, clearance, OGP-50-7(3)
Diesel, design and maintenance, OGP-50-7 (3-5)
Diesel, leakage, OGP-50-7(6-7)
Diesel, leakage tests, OGP-50-7
Diesel, manufacture, OGP-50-7
Diesel, materials for, OGP-50-7(4-5)
Diesel, parts must be accurate, corrosion resisting, hardened, OGP-50-7(1)
Diesel, plunger bushings, OGP-50-7(1-2, 5)
Diesel, standardization of, OGP-50-7(5)
performance under various conditions, OGP-50-3
used for oil-spray photography, OGP-50-3(3)
Ink, printing—see printing ink
Inspection and beauty, MAN-50-7(51-52)
and public opinion, MAN-50-7(51)
as quality control, MAN-50-7
by succeeding workman's jig, MAN-50-13 (18)
carried to sales field, MAN-50-7(49)
costs, MAN-50-7(51)
department policies, MAN-50-7(47-48)
department suggests improvements, MAN-50-7(47)
department supervised by engineering department, MAN-50-7(48)
during manufacture, MSP-50-15(3-4)
during production, MAN-50-7

Inspection (*continued*)
for 100 per cent perfection, MAN-50-7(52)
for quality, MAN-50-13(18)
freedom needed for, MAN-50-7(51)
independent of production, MAN-50-7(50)
methods, MAN-50-7(48-49)
not entirely non-productive, MAN-50-7(46)
of aircraft-engine parts, MSP-50-15
of airplanes, department of commerce, AER-50-1(6)
of airships, AER-50-4(1)
of jigs and fixtures, MSP-50-12(31)
plant, MSP-50-14(38-39)
of product, MAN-50-2(11); MAN-50-7(45); MAN-50-12(14)
100 per cent, MSP-50-15(4)
100 per cent checked by spot, MAN-50-7
small parts, MSP-50-15(2-3)
standard determination, MAN-50-7(46-47)
types of, MAN-50-7(50)
Inspector, influences acting on, MAN-50-7(47)
payment of, MAN-50-7(52)
promoted from operator, MAN-50-7(52)
Insulation consciousness, education toward, APM-50-15(54)
for dwelling houses as fuel saver, FSP-50-4(24)
of furnace hearths, FSP-50-37(120-121)
of walls, tests of, APM-50-15
surface constants, APM-50-15(54)
Insulator, balsa wood, AER-50-28(75-76)
Interchangeability of airplane parts, AER-50-15(59)
Interlocking system at Springfield, Mass., RR-50-10
system, control board for, RR-50-10(4-5)
system, electric, RR-50-10
system, electric, economy of, RR-50-10(5)
system, prevention of unauthorized movement of, RR-50-10(2)
Intermittent water-treatment plant, definition, FSP-50-46(218)
Internal-combustion engines—see also aircraft, automobile, Diesel, gas, and oil engines
combustion engine, altitude tests, OGP-50-5(12-13)
combustion engine analysis steps, OGP-50-5(17)
combustion engine, air-deficiency, OGP-50-5(22)
combustion engine, dissociation of gas in, OGP-50-5(16, 22)
combustion engine, effect of residual gas, OGP-50-5(14-15-16)
combustion engine, need for standard of comparison, OGP-50-5(13-14)
combustion engine, real-mixture standard, OGP-50-5(18-19)
combustion engine, residual gas calculations, OGP-50-5(18-19)
combustion engine, residual gas calculations, OGP-50-5(21, 22)
combustion engine, rich vs. lean mixture, OGP-50-5(18)
combustion engine, standards for, OGP-50-5(19)
combustion engine, thermal efficiency with gasoline, OGP-50-5(17)
Invar for automobile pistons, IS-50-6(12-13)
Inventory, balanced, MAN-50-5a(34)
space charge on, MAN-50-10(72)
Investment charges, MAN-50-10(76)
charge on inventory, MAN-50-10(68)
in surplus equipment, MAN-50-6(44)
Iron alloys with nickel in all proportions, IS-50-6(9)
aluminum affinity, IS-50-8(37)
and smoke damage, FSP-50-75(216)
and steel products handling, MH-50-4(5)
Armco, stress-strain curves at various temperatures, FSP-50-50(279)
cast, nickel in, IS-50-6(14)
Iron (*continued*)
cast, silicon in, IS-50-6(14)
effect of, on aluminum alloys, AER-50-7(3-6)
industry progress, IS-50-1
stainless, IS-50-4(1, 2)
IRWIN, J. B. Railway smoke abatement, FSP-50-19
Isentropic expansion, OGP-50-5(3-4)
Isinglass, Russian, improves glue, MSP-50-6(74)
Izod test of nickel steel, IS-50-6(10)

J

JACKSON, JOHN R. The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
JACOBS, S. S. Manufacturing and wage-payment methods as practiced by the Hall-Scott Motor Car Company (D), MAN-50-16
JACOBSEN, LYDIK. The theory of the dynamic vibration absorber (D), APM-50-7
JACOBSON, C. A. Diesel engines for locomotive (D), OGP-50-4
JEFFERSON, C. J. The characteristics of modern boilers (D), FSP-50-9
Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
The burning of liquid fuel (D), FSP-50-13
Jehle and Jardine research on piston temperatures, AER-50-7(2)
JEWELL, G. M. Damage due to smoke (D), FSP-50-75
Jig-boring machine progress, MSP-50-1(3)
building, MSP-50-12
design, MSP-50-12
for pipe welding, FSP-50-47(233)
Jigs and fixtures, cost accounting, MSP-50-12(29-30)
and fixtures, design and building, MSP-50-12
and fixtures, inspection, MSP-50-12(31)
and fixtures in electrical industry, MSP-50-18(25)
and fixtures, planning, MSP-50-12(29)
JOACHIM, WILLIAM F. Combustion in aircraft oil engines, AER-50-11
Cooperative Diesel-engine research (D), OGP-50-9
Manufacture of Diesel fuel injectors (D), OGP-50-7
Oil-spray investigations of the N.A.C.A., OGP-50-6
JOHNSON, J. B. Materials for aircraft parts subjected to high temperatures, AER-50-7
JOHNSON, LANE. Sheet rolling (D), IS-50-9
JOHNSTON, S. P. Production control in a wrought-brass mill (D), MAN-50-4
JONES, LLOYD. Sheet rolling (D), IS-50-9
JORDAN, J. P. Budgetary control (D), MAN-50-5b
JORGENSEN, O. E. The study of oil sprays for fuel-injection engines by means of high-speed motion pictures (D), OGP-50-3
JORY, ROBERT. Burning characteristics of different coals (D), FSP-50-52
Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57

K

KAEMMERLING, G. H. Some fundamental considerations in the design of boiler furnaces (D), FSP-50-39
KAISER, W. H. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
KARCH, H. S., and SHERMAN, R. A., and TAYLOR, EDMUND. Refractories service conditions in furnaces burning fuel-oil, FSP-50-81
KARELITZ, G. B. An investigation of the performance of waste-packed armature bearings, APM-50-1
and ELLIS, O. W. A study of tin-base bearing metals, MSP-50-11
Kármán investigation of columns, APM-50-9(65, 66)
KATES, EDGAR J. Diesel engines for locomotive (D), OGP-50-4
Efficiencies of Otto and Diesel engines (D), OGP-50-5
The economic field for large Diesel engines (D), OGP-50-11
The study of oil sprays for fuel-injection engines by means of high-speed motion pictures (D), OGP-50-3
KEARNEY, E. J. Symposium on shop-equipment maintenance (D), MSP-50-3
KEENAN, W. M. The K.S.G. process of low-temperature carbonization (D), FSP-50-28
KEETH, GROVER. Modernization of the industrial power plant (D), FSP-50-41
KELLER, J. D. The flow of heat through furnace hearths, FSP-50-37
KELLER, J. O. Training minor executives in a rapidly growing organization (D), MAN-50-11
KELLER, MARTIN. Coordinating wage incentives and production control (D), MAN-50-8
KELSEY, GEORGE W. Handling methods and equipment in a large mail-order house (D), MH-50-9
KEMPER, CARLTON. Experimental combustion chambers designed for high-speed Diesel engines, OGP-50-2
KENNEDY, PAUL S. Lacquer and varnish films, WDI-50-4
KENT, R. T. Control of quality (D), MAN-50-7
Determination of minimum-cost purchase quantities (D), MAN-50-6
Economic production quantities (D), MAN-50-10
Fuels, past and prospective (D), FSP-50-1
The high cost of fuel saving (D), FSP-50-4
The prerequisites of successful polishing (D), MSP-50-6
KIEHL, E. P., and HILL, J. B. Diesel-fuel-oil specifications (D), OGP-50-10
The Ruths steam accumulator (D), FSP-50-33
Kiln bibliography, FSP-50-11(93)
brick, fuels in, FSP-50-11
chimneys, FSP-50-11(88)
clamp, FSP-50-11(82)
coal sizes, FSP-50-11(92)
continuous and regenerative, FSP-50-11(88-93)
continuous, tests of, FSP-50-56(50)
direct-fire type, FSP-50-11(90)
draft affected by heated gases, FSP-50-11(88)
draft fans, FSP-50-11
economics of improved types of, FSP-50-11(94-95)
firing with gas or oil, FSP-50-11(85-86)
floor openings and flues in, FSP-50-11(86-88)
for china ware, FSP-50-56(50)
for porcelain, FSP-50-11(94)
for vitrified-clay sewer-pipe, FSP-50-11(93)
fuel characteristics, FSP-50-11(91-93)
function of bag wall in, FSP-50-11(86)
gases, course of, FSP-50-11(86-88)
muffle railroad-car tunnel type, FSP-50-11(91)
periodic, FSP-50-11(82-88)
periodic, furnaces and firing of, FSP-50-11(84)
periodic, influence of coal burned on, FSP-50-11(84-85)
proportions, FSP-50-11(88)

Kiln (*continued*)
railroad car tunnel type, FSP-50-11(90)
smoke nuisance, FSP-50-11(94)
tunnel, MH-50-1(5)
tunnel, air cooling of, FSP-50-56(45)
tunnel, fire in, should be out of sight of ware, FSP-50-56(44)
tunnel, fuel for, FSP-50-56
tunnel, gas travel in, FSP-50-56(44-50)
tunnel, heat distribution and number of furnaces, FSP-50-56(44)
tunnel, heat distribution control in, FSP-50-56(48-49)
tunnel, muffle, FSP-50-56(47-48)
tunnel, needs more engineering, FSP-50-56 (50)
tunnel, oxidizing and reducing atmospheres in, FSP-50-56(47)
tunnel, protecting cars from heat in, FSP-50-56
tunnel, pulverized-coal, needs much excess air, FSP-50-56(44)
twin, FSP-50-56(49)
types, FSP-50-11(82-93)

KIMBALL, A. L. Stress analysis in electrical rotating machinery (D), APM-50-16
The theory of the dynamic vibration absorber (D), APM-50-7

KINDEL, CHARLES, JR. Improvements in handling methods in the woodworking industry (D), WDI-50-5

KINGSWORTHY, R. A. The Ruths steam accumulator, FSP-50-33

KINZEL, A. B. Evaluation of the technical worth of a steel from physical test data, APM-50-12
Stress analysis in electrical rotating machinery (D), APM-50-16

Kinzel formula for steel technical worth, APM-50-12

KIRBERG, H. A. The prerequisites of successful polishing (D), MSP-50-6

Kirchoff's law, FSP-50-3(9)

KIRK, R. L. Training minor executives in a rapidly growing organization (D), MAN-50-11

KIRSTEN, F. K. Cycloidal propulsion applied to aircraft, AER-50-12
Comparative examination of airplane and airship (D), AER-50-20

Kirsten propeller for airship, AER-50-20(19-20)

KLEFFEL, HARRISON E. Boiler-furnace refractories (D), FSP-50-64
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Stoker advantages and disadvantages (D), FSP-50 65

KLEIN, F. Control of factory overhead (D), MAN-50-9

KLEIN, GEORGE F. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63

KLEINSCHMIDT, R. V. The K.S.G. process of low-temperature carbonization (D), FSP-50-28
Lubrication research, APM-50-4(1, 2-5)
Ruths steam accumulator (D), FSP-50-33

KLEMIN, ALEXANDER. High-speed motion pictures of air flow shown by, AER-50-10(11)

KLOSSON, M. M. Pumping problems in paper mills (D), PI-50-1

KNOWLES, CLARENCE R. Standardization of nomenclature, FSP-50-46

Kodacolor, PI-50-9(29)

KOEHLER, ARTHUR. Change in moisture content of lumber during rail shipment (D), WDI-50-8
Compressive tests of balsa wood (D), WDI-50-12
Improvements in handling methods in the woodworking industry (D), WDI-50-5

KOEHLER, ARTHUR (*continued*)
Our need for knowledge of tropical timbers (D), WDI-50-10
The need of research on tropical woods before marketing them, WDI-50-9

KONZO, SEICHI. Investigation of the pulp and paper industry in the State of Washington, WDI-50-7

Korfund for vibration insulation, WDI-50-12(26)

KOYL, C. H. Present tendency of boiler-water conditioning (D), FSP-50-58

Kraft process of making paper, WDI-50-3(3)

KRANER, H. M. Systems of workman payment in porcelain factories, MAN-50-12

KREFELD, W. J. Compressive tests of balsa wood (D), WDI-50-12

KREISINGER, HENRY. Application of powdered coal to small boilers of industrial plants, FSP-50-5
Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
Some factors in furnace design for high capacity (D), FSP-50-78
Some operating data of large steam generating units, FSP-50-34
and CROSS, B. J. Burning characteristics of different coals, FSP-50-52
and PURCELL, T. E. Some operating data of large steam generating units, FSP-50-34

KRIEG, EDWIN H. The Diesel engine and public utilities (D), OGP-50-14

K.S.G. process of low-temperature carbonization, FSP-50-28

KUGEL, H. K. Problems and methods in smoke-abatement work, FSP-50-77
Smoke-abatement methods used in Cleveland (D), FSP-50-21

KURKJIAN, ARMEN S. Automatic production of small wood parts (D), WDI-50-15

KUSHNICK, WILLIAM. Production control in a wrought-brass mill (D), MAN-50-4

KYLE, ELMER L. Smokeless and efficient firing of domestic furnaces—part II (D), FSP-50-76

L

Labor budget, MAN-50-5a(34)
control, MAN-50-2(10)
disputes, MAN-50-1(3)
fluidity, MAN-50-6(44)
indirect, control of, MAN-50-5a(31)
non-productive, reduced by group system wage, MAN-50-3(15)
loss in paper making, WDI-50-3(4)
problems, MAN-50-2(12)
productivity, MAN-50-1(3)
situation 1926–27, MAN-50-1(3)
surplus, and its absorbtion, MH-50-7(9)

Lacquer and varnish failure, WDI-50-4(1-3)
and varnish films, WDI-50-4
and varnish films, breakdown tests, WDI-50-4(1)
bleeding or cracking of, WDI-50-4(6)
reclaiming, WDI-50-5(6)
synthetic for outdoor use, WDI-50-4(5)
synthetic, resistant to ultra-violet rays, WDI-50-4(3-5)
synthetic, tests, WDI-50-4(5)

LAKE, F. W. The gas lift as applied to oil production, PET-50-2

Lanchester anti-vibrator, APM-50-7(9)
anti-vibrator, APM-50-8(59)

LANDER, C. H. The K.S.G. process of low-temperature carbonization (D), FSP-50-28

LANDIS, J. N. Engineering analysis as applied to the selection of type and size of power-plant equipment, FSP-50-42

LANE, A. H. The Pratt & Whitney gear-shaving process (D), MSP-50-17

LANE, F. D. The prerequisites of successful polishing (D), MSP-50-6

LANGENBERG, E. B. Measurement of atmospheric pollution, visible and invisible (D), FSP-50-20
Organizing a smoke-abatement campaign (D), FSP-50-22
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23

LANGSDORF, A. S. Effect of atmospheric smoke pollution (D), FSP-50-23
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23

LANGWORTHY, R. A. Modernization of the industrial power plant (D), FSP-50-41

LANNERT, EARL L. Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66

Larch tree in Washington State, WDI-50-7(4)

Lathe with ball bearings, MSP-50-8(85-86)

Lead and smoke damage, FSP-50-75(216)

Leather products handling, MH-50-4(5)

LEE, M. Handling methods and equipment in a large mail-order house (D), MH-50-9

LEEDS, CHARLES C. A materials handling and transport organization (D), MH-50-8

LEILICH, FRANK T. Problems and methods in smoke-abatement work (D), FSP-50-77

LEITCH, H. W. High-pressure steam at Edgar station (D), FSP-50-30

Lehr, glass, FSP-50-55(40); FSP-50-56(48)

LELAND, O. M. Friction in dredge pipes (D), HYD-50-7

LEMP, HERMANN. Diesel engines for locomotive (D), OGP-50-4
The Diesel engine and public utilities (D), OGP-50-14

Lens for railroad signal, RR-50-10

L.C.L. freight, the motor truck and, RR-50-7

LESSELS, J. M. Mechanical properties of aluminum casting alloys of elevated temperatures (D), IS-50-8

LETCHWORTH, PIERRE E., and WEEKS, WALTER S. The reciprocating dry-vacuum pump, FSP-50-43

LEVY, A. G. Computation of the rail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5

LEWIS, A. L. Materials handling as an aid to production (D), MH-50-4

LEWIS, FRANK M. Torsional vibration research, APM-50-8(25, 50, 52, 53, 55, 58)

LICHTENSTEIN, JOSEPH. A method of analyzing the performance curves of centrifugal pumps, HYD-50-3

LIES, B. EUGENIA, and SEALY, MARIE P. Motion-study principles and their application in a department store, MAN-50-17A

Life raft of balsa wood, WDI-50-12(27)

Lift coefficient, effect of interference on, AER-50-6(4)

Lignite, FSP-50-52(13)
brown, FSP-50-51(2)
for brick kiln, FSP-50-11(93)
for railroad, FSP-50-68(155-156)
gas from, FSP-50-52(17)
pulverized, FSP-50-5(31, 32)

Lime, hydrated, definition, FSP-50-46(218)

LINDSETH, ELMER. Some fundamental consideration in the design of boiler furnaces (D), FSP-50-39

Line-up manufacture of automobile, MAN-50-16

Lineshaft loss in paper making, WDI-50-3(4)

LINN, HOMER R. Smoke-abatement methods used in Cleveland (D), FSP-50-21
The burning of liquid fuel (D), FSP-50-13

LIPETZ, A. I. Back pressure and cut-off adjustment for the locomotive (D), RR-50-5
Diesel engines for locomotive (D), OGP-50-4
Stresses in the drive system of three-cylinder locomotives (D), APM-50-13
Vibration of bridges (D), RR-50-9

Liquidus surface, tin-base metals, MSP-50-11(14)

Lithograph plate, life of, PI-50-10(36)
Lithographer, training of, PI-50-10(33)
Lithographic press, offset, two-, three-, and four-color, PI-50-10(35-36)
processes, PI-50-10(37)
reproduction, artistic, PI-50-10(36-37)
Lithographing colors, PI-50-10(34)
machinery, PI-50-10(34-36)
materials, PI-50-10(34)
plant layout, PI-50-10(34)
Lithography, PI-50-10
by electrodeposition of rubber, PI-50-10(36)
commercial and artistic, PI-50-10(37)
dry, PI-50-10(36, 37)
needs air conditioning, PI-50-10(34)
production control, PI-50-10(33-34)
reason for, PI-50-10(33)
research, PI-50-10(36)
troubles, PI-50-10(37)
wage incentive, PI-50-10(33-34)
LITTLE, W. R. Some fundamental consideration in the design of boiler furnaces (D), FSP-50-39
Live tailstock center with ball bearings, MSP-50-8(87)
Load factor of airships, AER-50-4(3)
regulator, Meyer, PI-50-2
LOCKWOOD, R. L. Marine terminal operation (D), MH-50-11
Locomotive adhesion, APM-50-13(35, 41, 42)
adhesive weight, RR-50-8(46)
air whistle, FSP-50-68(153)
auxiliaries, heat consumption of, RR-50-8 (43)
back pressure and cut-off adjustment for the, RR-50-5
back-pressure gage, FSP-50-68(152)
back-pressure-gage inaccuracies, RR-50-5 (15-16)
back-pressure road tests, RR-50-5
back-pressure regulator, RR-50-5(16, 18)
balance weights, impact of, RR-50-9(54-55)
best back pressure not constant, RR-50-5 (18)
bibliography, RR-50-1(5-7)
boiler, high-pressure, steel for, RR-50-1(1)
boiler of nickel steel, IS-50-6(11-12)
booster, FSP-50-68(152, 153)
burning screenings economically, FSP-50-73 (205-206)
cast-steel frames for, RR-50-1(1)
center-line error, APM-50-13(34, 35, 36)
cinder losses, FSP-50-73(202-203)
coal efficiency tests, FSP-50-73(204)
coal size and excess air, FSP-50-73(206)
compound, indicator card, RR-50-4(8)
compounding, advantages of, RR-50-4(9)
condition, RR-50-11(15-17)
costs, RR-50-8(40-41)
critical-pressure turbine, RR-50-8(45-48)
cut-off control vs. throttle control, FSP-50-73 (206-207, 208)
cylinder efficiency, RR-50-4(6-7)
cylinders, high steam pressures in, RR-50-4
cylinder horsepower curve, OGP-50-4(11)
design progress, FSP-50-25(3)
development, FSP-50-68(151-154)
Diesel, RR-50-1(1); RR-50-4(11); OGP-50-8(14-16); OGP-50-9(30)
Diesel, advantages, OGP-50-4(8)
Diesel, compared with steam, OGP-50-4
Diesel-compressed air, OGP-50-4(9)
Diesel, compressed-air transmission, OGP-50-8(15)
Diesel-electric direct-drive, OGP-50-4(9)
Diesel-electric, efficiency, OGP-50-4(12)
Diesel-electric for main-line work, tests, OGP-50-4(8-9)
Diesel-electric, for switching, OGP-50-4(8)
Diesel-electric vs. steam, OGP-50-4(12)
Diesel-electric vs. steam, maintenance, OGP-50-4(8)
Locomotive (*continued*)
Diesel-electric, weight and design of, OGP-50-4(12)
Diesel engines for, OGP-50-4
Diesel, essentially full-speed, full-load machine, OGP-50-4(9)
Diesel, flexibility, OGP-50-4(1, 9)
Diesel, gear-drive, performance, OGP-50-4 (11-12)
Diesel, magnetic clutch, OGP-50-1(1)
Diesel, low efficiency in practice, OGP-50-4 (7)
Diesel, progress, OGP-50-1(1)
Diesel-steam, OGP-50-4
Diesel-steam, booster for, OGP-50-4(6)
Diesel-steam, cylinder corrosion, OGP-50-4 (3, 7)
Diesel-steam, difficulties of high-pressure boiler for, OGP-50-4(8)
Diesel-steam, direct drive vs. gearing for, OGP-50-4(6)
Diesel-steam, draft problems, OGP-50-4 (11)
Diesel-steam, ease of starting, OGP-50-4(13)
Diesel-steam, fuel for, OGP-50-4(5)
Diesel-steam, heat balance, OGP-50-4(11)
Diesel-steam, Kitson-Still, OGP-50-8(15)
Diesel-steam, no corrosion in cylinders of, OGP-50-4(3)
Diesel-steam, not smokeless, OGP-50-4(11)
Diesel-steam, simplicity of, OGP-50-4(6)
Diesel-steam, speed at which Diesel starts, OGP-50-4(4)
Diesel-steam, stresses in, OGP-50-4(7)
Diesel-steam, unsuited to railroad work, OGP-50-4(7)
Diesel-steam, uses solid injection, OGP-50-4 (5)
Diesel-steam, uses Walschaerts valve gear, OGP-50-4(5)
Diesel-steam vs. Diesel-electric, OGP-50-4 (9-10)
Diesel-steam vs. Still, OGP-50-4(7-8)
Diesel-steam, weight of, compared with steam, OGP-50-4(13)
Diesel vs. steam, thermal efficiencies, OGP-50-4(10)
drafting of, FSP-50-73(207)
drawbar horsepower, RR-50-4(10)
driver needs more skill, RR-50-5(15)
double-pressure, RR-50-4(9)
drive should be divided with more than four pairs of drivers, APM-50-13(40)
economic cut-out from back-pressure value, RR-50-5(14-15)
economical fuel for, FSP-50-73(204-205)
electric, RR-50-1(1)
electric compared with steam, APM-50-13 (41)
equipment for car heating, RR-50-6(21-23)
firebox must suit fuel, FSP-50-69(159-160)
fireless, FSP-50-33(80)
fireman trained to economy, FSP-50-69 (157-158)
fire pan for oil fuel, FSP-50-68(149-150)
frame, cast with cylinders integral, MSP-50-1(3)
framing, RR-50-8(47-48)
freight, data on, RR-50-11(13)
fuel consumption, FSP-50-69(158)
fuel-economy devices, FSP-50-68(152-153)
fuel selection, FSP-50-69
heater for, vs. injector, RR-50-5(14-15)
heavy modern, hauls longer train with increased economy, RR-50-11(15-16)
high heat release in, RR-50-8(44)
high-pressure, RR-50-4; IS-50-6(11)
high-pressure, auxiliaries for, RR-50-8(35-36)
high-pressure, arrangement of, RR-50-8 (41-42)
high-pressure, boiler efficiency of, RR-50-8 (48)
Locomotive (*continued*)
high-pressure, compared with high-pressure pneumatic and hydraulic plants, RR-50-8 (48)
high-pressure, performance, IS-50-6(12)
high-pressure, needs feedwater heating, RR-50-8(34)
high-speed, with low back pressures, RR-50-5(16)
high steam pressure and condensing exhaust for, RR-50-8
inertia stresses, APM-50-13(24-25)
journal lubrication, IS-50-11(27, 28)
limiting value of back pressure, RR-50-5 (13-14)
load factor, OGP-50-4(13)
machine efficiency, RR-50-8(36-38)
Martin water table for, FSP-50-68(153, 154)
mechanical draft for, RR-50-1(4)
multiple-throttle, FSP-50-68(152)
nickel steel in, IS-50-10(23)
oil and water supply columns set close together, FSP-50-68(148)
oil burner for, FSP-50-68(149)
oil burning, FSP-50-13(104-105)
oil fuel for, FSP-50-68
oil heaters, FSP-50-68(148-149)
oil tank, FSP-50-68(148-149)
operating conditions, RR-50-5(14)
out of balance, RR-50-9(61)
passenger, data on, RR-50-11(14)
performance, RR-50-5(13-14)
performance diagrams, RR-50-5(17)
power reverse gear, FSP-50-68(152-153)
progress, RR-50-1(1-3)
relative standing of sized coals for, FSP-50-73(202)
run is now longer, FSP-50-68(153-154)
Schmidt-Henschel two-pressure, RR-50-4(9)
service and sizes of coal, FSP-50-73
side-rod calculation, old methods, APM-50-13(37-38)
side-rod clearance, effect on stresses, APM-50-13
side rod, effect of elasticity, APM-50-13(39)
side rod, effect of unequal lengths, APM-50-13(38-39)
side-rod loads based on piston thrust, APM-50-13(38)
side-rod load variation during revolution, APM-50-13(38, 39)
side-rod stresses, APM-50-13
side-rod stresses and resonance, APM-50-13 (35)
smoke, FSP-50-75(213-214)
sparks affected by humidity, RR-50-13(35)
sparks and character of coal, RR-50-13(35)
sparks do not travel far from track, RR-50-13
sparks, legal aspects, RR-50-13
sparks not responsible for fires, RR-50-13
spark temperature as judged by color, RR-50-13(34)
stack loss with high percentage of fines, FSP-50-69(159)
steam-air ratio, RR-50-8(43)
steam, high-pressure, OGP-50-4(10)
steam vs. Diesel, RR-50-8(44)
still, Diesel-steam, OGP-50-4
stress peaks reduced by elasticity, APM-50-13(41)
super-pressure, tentative design, RR-50-8 (45-48)
terminals with direct steaming, advantages of, FSP-50-19 (154-158)
test plants in United States, FSP-50-73(204)
tests for coal consumption, FSP-50-73 (200-204)
thermal efficiency, RR-50-8(38-40)
three-cylinder, stresses in drive system of, APM-50-13
three-cylinder susceptible to inaccuracies, APM-50-13(38, 42)

Locomotive (*continued*)
torque variation, APM-50-13(41)
tractive effort during chattering slip, APM-50-13(35)
transmission efficiencies, RR-50-8(36, 38)
turbine, RR-50-4(11)
turbine, jackshaft drive capacity, OGP-50-4 (10)
using low-grade fuel, FSP-50-73(204)
using screenings, FSP-50-69(160)
utilization, RR-50-11(13-17)
value, RR-50-8(40)
weight limitations, RR-50-8(44)
with high-pressure steam and condensing exhaust, RR-50-8
with limited cut-off, FSP-50-68(151-152)
with more than two driving axles, APM-50-13 (33-34)
Loebell, Henry O. Industrial-furnace efficiency, economic consideration(D), FSP-50-55
Loewenberg, Fritz. Stresses in the drive system of three-cylinder locomotives, APM-50-13
Logging difficulties, tropical wood, WDI-50-9(7)
Long, D. R. Materials handling as an aid to production (D), MH-50-4
Symposium on shop-equipment maintenance (D), MSP-50-3
Longfield, Reynolds. Increasing the production of cotton padders, TEX-50-1
Loom, plain-bearing compared with roller-bearing, TEX-50-3
Loud-speaker telephone for railway-yard, RR-50-12(25)
Low-temperature carbonization, K.S.G. process of, FSP-50-28
Lubricant, effect of heat on viscosity of, APM-50-4(7)
inertia pressure on, APM-50-4(7)
viscosity under high pressure, APM-50-4 (1, 2-5)
Lubrication, MH-50-1(1); MSP-50-3(28-30)
centralized, for machine tools, MSP-50-1(2)
department for machine shop, MSP-50-3(25)
equations, Reynolds and Harrison, APM-50-4(1)
of anti-friction bearings, MSP-50-8(88-89)
of Diesel engines, OGP-50-9(29)
of journal bearings, APM-50-4(1)
of machine tools, MSP-50-2(13); MSP-50-3 (25-26); MSP-50-5(62, 66)
pressure systems, MH-50-1(5)
research, progress in, APM-50-4
Lucas, Theodore. A new propeller-type, high-speed windmill for electric generation (D), AER-50-6
Propeller-type windmills (D), AER 50-6(16)
Luder's lines, APM-50-16(71-72)
line test, FSP-50-49(250)
Lum, Merritt. Materials handling as an aid to production (D), MH-50-4
Lumber—see also wood
during rail shipment, change in moisture content of, WDI-50-8
handling, MH-50-4(5)
handling on dock, MH-50-11(2)
grading, WDI-50-9(6)
shipment, change of moisture content during, WDI-50-8
Lundgren, Edwin. Combustion and heat transfer (D), FSP-50-3
Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
Some factors in furnace design for high capacity (D), FSP-50-78
The characteristics of modern stokers (D), FSP-50-15
Lykken, H. G. Collecting the dust from chimney gases of powdered-fuel installations (D), FSP-50-59
Lykken, H. G. (*continued*)
Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
Pulverized-coal firing of marine water tube boilers (D), FSP-50-66

M

McAdams, W. H. General heat-transfer formulas for conduction and convection (D), PET-50-2
McAfee, W. Keith. Systems of workman payment in porcelain factories (D), MAN-50-12
McBride, Thomas C. Back pressure and cut-off adjustment for the locomotive RR-50-5
McCabe, Charles J. Problems and methods in smoke-abatement work (D), FSP-50-77
McCanne, W. R. Coordinating wage incentives and production control (D), MAN-50-8
McConnell, Glenver. Progress in rig and field equipment, PET-50-1
McCune, J. C. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
McDonald, E. L. The characteristics of modern stokers (D), FSP-50-15
McFarland, E. H. Some economic factors in power-station design (D), FSP-50-40
McHugh, A. L. A method of analyzing the performance curves of centrifugal pumps (D), HYD-50-3
McKee, S. A. Bearing investigations, APM-50-4(1)
McKnight, Charles. Recent developments in the use of nickel steels, IS-50-6
and Humpton, W. G. The manufacture of nickel-steel plate, IS-50-10
McLaughlin, D. J. Change in moisture content of lumber during rail shipment (D), WDI-50-8
Engineering characteristics of plywood (D), WDI-50-13
McMillan, L. B. Investigation of insulated walls (D), APM-50-15
The Ruths steam accumulator (D), FSP-50 33
McVetty, P. G. Mechanical properties of aluminum casting alloys of elevated temperatures (D), IS-50-8
Macconochi, Arthur F. The Diesel engine and public utilities (D), OGP-50-14
Macdill, Leslie. The development and technical aspects of the Fairchild Caminez engine (D), AER-50-9
Fairchild Caminez engine (D), AER-50-9(6)
MacFarlane, Malcolm. Selection and use of fuels in locomotive practice, FSP-50-69
Machine drive progress, MSP-50-1(2)
frame, electrical, vibration of, APM-50-11
maintenance, National Cash Register plant, MSP-50-3(24-25)
saw research, WDI-50-1(1)
-shop operating costs, MSP-50-14(38)
-shop practice, progress, MSP-50-1
tool and human equation, MSP-50-7(81)
tool, automatic, MSP-50-2(13-14)
tool, automatic feed and speed change, MSP-50-5(65)
tool builders, financial status of, MSP-50-2 (14)
tool buying methods, MSP-50-7(79-80)
tool checking, MSP-50-3(23)
tool, cutting compound for, MSP-50-5(63)
tool depreciation, MSP-50-5(67)
tool design and compressed air, MSP-50-4 (41)
tool design and hydraulics, MSP-50-4(41-42)
tool designs should be modernized, MSP-50-2 (13)
tool development from user's viewpoint, MSP-50-2
Machine (*continued*)
tool, disposal of, obsolete, MSP-50-7(80)
tool faults, MSP-50-7(80)
tool finishing, MSP-50-1(3)
tool flexibility, MSP-50-5(66)
tool, friction drive, MSP-50-7(82)
tools from a user's viewpoint, the development of, MSP-50-2
tool, guards for and installation of, are expensive, MSP-50-2(11)
tool, hire high-grade labor for, MSP-50-2(6)
tool, hydraulic control, MSP-50-2(11-12, 13)
tool, hydraulic feed for, MSP-50-4
tool, hydraulic feed with accumulator, disadvantages, MSP-50-4(34)
tool illumination, MSP-50-2(14, 15)
tool in electrical industry, MSP-50-18
tool industry, economics, MSP-50-7(77)
tool inspection, MSP-50-3(24)
tool inspection and repair, MSP-50-3(24)
tool lubrication, MSP-50-2(13-14); MSP-50-3(25-26, 28-30); MSP-50-5(62, 66)
tool maintenance, MSP-50-3(20); MSP-50-13
tool, modern improvements, MSP-50-5(62)
tool progress, MSP-50-1(1-2)
tool progress in automobile industry, MSP-50-1(2)
tools, push-button control of, MSP-50-1(2)
tool repair, MSP-50-13(33-34)
tool repair and replacement, MSP-50-3(23); MSP-50-3(26, 28-29); MSP-50-5; MSP-50-13(34)
tool safety, MSP-50-2(13, 14, 15); MSP-50-3(23)
tool drives, MSP-50-7(80-81)
tool, man-equivalent of, MSP-50-7(82)
tool, multiple or continuous cutting, MSP-50-18(25)
tool obsolescence, MSP-50-5; MSP-50-7(78)
tool policies, MSP-50-7
tool, psychological effect of, MSP-50-7(81)
tool sales must suit buyer, MSP-50-7(82)
tool, strengthened by repairs, MSP-50-3(25)
tool scrapping, MSP-50-7(82)
tool, several in sequence under one operator, MSP-50-18(25)
tool spindle, ball bearing, MSP-50-10
tool, with anti-friction bearings, MSP-50-5 (62, 65)
tool with anti-friction bearings, applications, MSP-50-8
tool with anti-friction bearings, rigidity of, MSP-50-8
tools, combination of several into a unit, MSP-50-2(15)
tools, recent developments in application of anti-friction bearings to, MSP-50-8
Machinery, rotating, stresses in—see critical speed, electrical machinery, rotor, shaft, stress, turbo-rotor, vibration
rotating, stress analysis in, APM-50-16
standards and safety, MSP-50-2(6)
MacKenzie, W. J. The manufacture of nickel-steel plate (D), IS-50-10
Madsen, Sern. Improvements in handling methods in the woodworking industry (D), WDI-50-5
Lacquer and varnish films (D), WDI-50-4
Static loads upon bus bodies (D), WDI-50-6
Wood-burning furnaces (D), WDI-50-16B
Magnesium, effect on aluminum alloys, AER-50-7(3-6)
lightest material in aircraft engine, AER-50-5(2)
Magnetic strain gage, APM-50-13(35)
Magruder, William T. Experimental combustion chambers designed for high-speed Diesel engines (D), OGP-50-2
Training minor executives in a rapidly growing organization (D), MAN-50-11

MAHER, NOLAN W. Smokeless and efficient firing of domestic furnaces—part II (D), FSP-50-76
Mail-order house, materials handling in, MH-50-9
MAIN, CHARLES T. The value of water in textile mills for purposes other than water power, TEX-50-2
Maintenance accounting, MSP-50-3(19-20)
and return on capital investment, MSP-50-3 (19-22)
budget, MSP-50-3(26, 27, 29)
department and its relation to plant organization, MSP-50-14(37)
departmentalized, MSP-50-3(24)
in the large industrial plant, MSP-50-14
of electric truck, MH-50-3
of machine equipment at National Cash Register Company's plant, MSP-50-3
of machine tools, MSP-50-13
of shop equipment, MSP-50-3(23-26)
personnel, MSP-50-3(21-22); MSP-50-14(39)
MAJOR, W. S. Burning characteristics of different coals (D), FSP-50-52
MALLAY, P. D. Heating and ventilating of passenger cars (D), RR-50-6
MALEEV, V. L. Diesel-fuel-oil specifications (D), OGP-50-10
Management and printing, PI-50-3(22)
conferences in Europe, MAN-50-1(2)
in agriculture, MAN-50-1(5)
engineering in Europe, MAN-50-1(1-2)
in stores, MAN-50-1(5)
engineering progress, MAN-50-1
education, MAN-50-1(6)
of welding, FSP-50-48(236)
societies, MAN-50-1(5)
week, MAN-50-1(6)
of tube mill, IS-50-7(19-20)
Mandrel, correct piercing, for tube mill, IS-50-7 (19)
Manganese, effect on aluminum alloys, AER-50-7(3-6)
MANIER, RALPH L. Industrial-furnace efficiency, economic consideration (D), FSP-50-55
MANIKOWSKE, GEORGE. A new propeller-type high-speed windmill for electric generation (D), AER-50-6
Manometer for air-flow measurement, APM-50-3 (4)
for steam, FSP-50-79(294-295)
for vacuum-pump tests, FSP-50-43(202)
Manufacturer's association for apprentice training, MAN-50-14
Manufacturing, corrections and rejections in, MAN-50-16(16-17)
cost, MAN-50-10(67-68); MAN-50-13(19)
expense budget, MAN-50-5a(34)
expense schedule, MAN-50-5a(30)
methods, motor-car company, MAN-50-16
Maps, aerial photo, measurement by precision instruments, AER-50-1(6)
MARBLE, EDWIN H. The value of water in textile mills for purposes other than water power (D), TEX-50-2
Marine terminal—see terminal, marine
Marketing progress, MAN-50-1(4)
MARKS, J. H. The control of quality in a manufactured product, MAN-50-13
MARKS, LIONEL S. Efficiencies of Otto and Diesel engines (D), OGP-50-5
MARKSON, ALFRED A. High-pressure steam boilers (D), FSP-50-32
MARQUIS, CHARLES F. Shop-equipment policies in representative plants (D), MSP-50-7
MARSH, K., TEMPLIN, R. L., and BRAGLIO, C. Mechanical properties of aluminum casting alloys at elevated temperatures, IS-50-8
MARTIN, F. W. Some economic factors in power-station design (D), FSP-50-40
Mass production in furniture industry, WDI-50-11
Material, materials:
aircraft, AER-50-1(6)
at elevated temperatures, physical properties of, AER-50-7(6)
budget, MAN-50-5a(34)
control in rubber industry, MAN-50-2(9)
flow chart, brass mill, MAN-50-4(21)
for aircraft-engine cylinder heads and pistons, AER-50-7(3-6)
for aircraft parts subjected to high temperatures, AER-50-7
granular, handled by air, MH-50-1(4)
handling—see also skid shipment
handling, adjustable height truck body for, MH-50-8(19)
handling aids production, MH-50-4
handling and accident reduction, MH-50-3 (8)
handling and plant design, MH-50-4(2)
handling and safety, MH-50-8(17)
handling and transport organization, MH-50-8(13)
handling as an aid to production, MH-50-4
handling at Cincinnati Milling Machine Co., MH-50-4(1)
handling at docks and storage plants, MH-50-6
handling at General Electric plant, MH-50-8 (18)
handling at Westinghouse plant, MH-50-8
handling bibliography, MH-50-1(6-11)
handling by auto and truck, MH-50-8
handling by chutes and step towers, MH-50-2(4)
handling by crane, MH-50-8(14-15)
handling by elevators, MH-50-8(14)
handling by industrial railway, snow difficulties, MH-50-8(19-20)
handling by standard-gage railroad, MH-50-8
handling by industrial railroad, MH-50-8
handling by shop express, MH-50-8(16)
handling, box-car loader, MH-50-8(19)
handling, classification yard for industrial railway, MH-50-8(15-16)
handling coordination, MH-50-4(3-4)
handling, copper wire on reels, MH-50-8(20)
handling costs, MH-50-4(7); MH-50-7 (9-12); MH-50-8(20)
handling decreases production costs, MH-50-7(10)
handling department handles pay envelopes, MH-50-8(14)
handling dispatch board, MH-50-8(17)
handling, economy in, MH-50-7
handling equipment, ball bearings for, MH-50-9(24)
handling equipment selection, MH-50-4(3); MH-50-7(11)
handling equipment should be flexible, MH-50-7(10-11)
handling equipment should be standard, MH-50-7(10)
handling flexibility, MH-50-4(3-4)
handling, fundamental principles, MH-50-7
handling, group system of payment, MH-50-8(16)
handling in automobile factories, MH-50-4 (8); MAN-50-16
handling in coal industry, MH-50-7(12)
handling in enameling work, MH-50-10
handling in iron works, MH-50-8(19)
handling in large mail-order house, MH-50-9
handling in lithography, PI-50-10(34)
handling in lumber industry, MH-50-4(7)
handling in shoe factory, MH-50-4(8)
handling in various industries, MH-50-1(4-5)
handling in woodworking, WDI-50-5
handling maintenance, MH-50-9(24)
handling, marine, MH-50-1(5)
handling methods should be integral part of plant, MH-50-7(10)
Material, materials (*continued*)
handling on docks, MH-50-11(10)
handling on skids, MH-50-8(15)
handling, product designed for easy handling, MH-50-4(2)
handling progress, MH-50-1
handling reduces economic loss, MH-50-4(5)
handling reliability, MH-50-7(12)
handling, return on investment, MH-50-4(4)
handling safety, MH-50-4(3, 6)
handling savings, MH-50-8(18-19)
handling, separate department for, MH-50-8
handling simplified by specifying skid shipment, MH-50-4(7)
handling, wage incentive for, MH-50-8 (15-17)
of construction for pumps, HYD-50-4(7)
positive identification of, MSP-50-15(1)
properties at high temperatures, FSP-50-30 (35)
raw importing costs of, and plant location, MAN-50-15(9-10)
raw, inspection of, MSP-50-15(1)
research on properties of, FSP-50-25(6)
supply problems, MAN-50-2(12)
testing before manufacture, MAN-50-7(45)
worked on while being conveyed, MH-50-4(8)
MATHEWS, ROBERTSON. Experimental combustion chambers designed for high-speed Diesel engines (D), OGP-50-2
Heavy-oil engines for aircraft (D), AER-50-23
The oil engine and aeronautics (D), AER-50-17
The study of oil sprays for fuel-injection engines by means of high-speed motion pictures (D), OGP-50-3
Matter, definitions and types, FSP-50-46(218)
MATTERN, J. F. Coordinating wage incentives and production control (D), MAN-50-3
Maintenance of machine tools, MSP-50-13
MATTHEWS, D. M. Our need for knowledge of tropical timbers (D), WDI-50-10
The need of research on tropical woods before marketing them (D), WDI-50-9
MAWHINNEY, M. H. The flow of heat through furnace hearths (D), FSP-50-37
MAYNZ, THEODORE. Boiler-furnace refractories (D), FSP-50-64
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Present tendency of boiler-water conditioning (D), FSP-50-58
Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57
Stoker advantages and disadvantages, FSP-50-65
MAYR, KARL A. High-pressure steam boilers (D), FSP-50-32
Power consumption of boiler-feed pumps, FSP-50-44
Maximum ordering quantity, MAN-50-6(42–43, shear theory, APM-50-16(61)
Mechanical engineer and oil industry, PET-50-1(1)
engineer, contributions to printing, PI-50-5(9)
engineer in railroad and railroad supply industries, RR-50-2
engineer needed in railroad maintenance and operation, RR-50-2(11)
loader for coal, MH-50-7(12)
Mechanization of industry gives surplus labor, MH-50-7(9)
MEKLER, L. A. The burning of liquid fuel (D), FSP-50-13
The high cost of fuel saving (D), FSP-50-4
The use of fuels in brick kilns (D), FSP-50-11
MELL, C. D. Our need for knowledge of tropical timbers (D), WDI-50-10

MELLER, H. B. Damage due to smoke, FSP-50-75
Problems and methods in smoke-abatement work (D), FSP-50-77
Men in wrong jobs because of parental advice, RR-50-2(26)
Mercury column, temperature correction for, APM-50-3(9)
-vapor turbine—see turbine, mercury-vapor
MERRILL, RALPH K. Change in moisture content of lumber during rail shipment (D), WDI-50-8
Engineering characteristics of plywood (D), WDI-50-13
Improvements in handling methods in the woodworking industry, WDI-50-5
Wood-burning furnaces (D), WDI-50-16B
Metal and smoke damage, FSP-50-75(215-216)
construction of airplanes, AER-50-1(2)
deep stamping, technical worth of, APM-50-12(16, 21)
creep of, FSP-50-32(51-52)
working industries, economic factors, MSP-50-1(1)
Metals—see also bearing metals and under name of given metal
ferrous—see also iron and steel
ferrous, bibliography of high-temperature research, FSP-50-50(278)
ferrous, comparison of long time expansion tests with short time tensile tests at high temperatures, FSP-50-50
ferrous, highest temperature tests made, FSP-50-50(267)
ferrous, plastic flow theory, FSP-50-50(263-264)
ferrous, proportional-limit, FSP-50-50
ferrous, stresses above proportionality limit carried indefinitely, FSP-50-50(279)
ferrous, tensile and expansion fractures, FSP-50-50(269-273)
gluing of, AER-50-16(64)
Metallurgy of aircraft engines, AER-50-5
use of pulverized coal in basic open-hearth furnace, FSP-50-36; IS-50-5
Meteorological service for commercial airways, AER-50-13
Meteorology—see also weather stations and observations
aeronautical, AER-50-1(6)
transatlantic flying, AER-50-20(13-14)
MEYER, ADOLPH F. Pulp-grinder control reduces paper costs, PI-50-2
Meyer governor for water wheel and pulp grinder, PI-50-2
MEYERS, E. H. Investigation of insulated walls (D), APM-50-15
MICHLER, G. H. Diesel-fuel-oil specifications, OGP-50-10
Micromotion, Gilbreth, MAN-50-1(5)
study, MAN-50-17A(22-23)
Mill drive, IS-50-1(1)
for pulverizing coal, FSP-50-5(27-28); FSP-50-25(2)
hammer, wear of, FSP-50-60(93, 94, 95)
pilger, IS-50-1(1)
pulverizing, performance of various types, FSP-50-60
MILLAR, W. L. The development of machine tools from a user's viewpoint (D), MSP-50-2
MILLER, E. F. Air constants, APM-50-3(11)
Engineering in the printing industries, PI-50-3
MILLER, ROBERT C. Analysis of bird flight, AER-50-12(25)
MILLER, SPENCER. Operating costs of electric industrial trucks and tractors (D), MH-50-3
Milling machine, MSP-50-5(63)
machine arbor standardization, MSP-50-2(15)
machine, hydraulic feed, MSP-50-4(42-50)
Milling (*continued*)
machine, hydraulic feeding circuit, MSP-50-4(43-46)
machine, hydraulic, performance curves, MSP-50-4(46-47, 48-49)
machine, rapid-traverse hydraulic, MSP-50-4(44-45)
machine, vibration in hydraulic, MSP-50-4(45)
machine with ball bearings, MSP-50-8(86)
MINERVITCH, J. R. The K.S.G. process of low-temperature carbonization (D), FSP-50-28
MITTENDORF, WM. Economics of dry-quenching coke by the Sulzer process (D), FSP-50-17
Factors governing the purchase of coal (D), FSP-50-7
The preparation of coal with special reference to quality (D), FSP-50-18
Modulus of elasticity at high temperatures, FSP-50-32(51)
of elasticity at various temperatures, IS-50-8(28)
of elasticity of aluminum alloys, IS-50-8(32)
MOJESCTIC, A. F. Handling methods and equipment in a large mail-order house (D), MH-50-9
Mollier diagram, high-pressure, RR-50-8(34)
MONNETT, OSBORN. Damage due to smoke (D), FSP-50-75
Organizing a smoke-abatement campaign (D), FSP-50-22
Problems and methods in smoke-abatement work (D), FSP-50-77
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
Monotype, PI-50-5(9)
MONTGOMERY, D. H. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
MOODY, A. H. Present tendency of boiler-water conditioning (D), FSP-50-58
MOODY, L. F. Computation of the tail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5
MOORE, GEORGE T. The measurement of atmospheric pollution, visible and invisible, FSP-50-20
MOORE, H. F. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
MOORE, PHILIP N. American fuel resources (D), FSP-50-2
MOORE, R P. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station, FSP-50-10
MOREHEAD, F. H. High-pressure steam at Edgar station (D), FSP-50-30
MORGAN, A. B. The degree-day method of fuel-consumption analysis (D), PET-50-4
MORGAN, HOWARD W. Washing and preparation of coal (D), FSP-50-53
MORREY, C. P. Training minor executives in a rapidly growing organization (D), MAN-50-11
MORRIS, R. H. Application of powdered coal to small boilers of industrial plants (D), FSP-50-5
MORRISON, L. H. Experimental combustion chambers designed for high-speed Diesel engines (D), OGP-50-2
MORROW, L. C. Shop-equipment policies in representative plants, MSP-50-7
Mortar and smoke damage, FSP-50-75(215)
MORTON, A. W. Manufacture of Diesel fuel injectors (D), OGP-50-7(7)
MORTON, J. W. Diesel-fuel-oil specifications (D), OGP-50-10(41)
MOSS, SANFORD A. Measurement of flow of air and gas with nozzles, APM-50-3
Motion picture, high-speed, for study of wing flutter, AER-50-10(11)
study and office layout, MAN-50-17A(26)
study of group work, MAN-50-17B
Motion (*continued*)
study principles applied to department store, MAN-50-17A
study reduces fatigue and increases earnings, MAN-50-17B
Motor drive vs. belt drive, MSP-50-2(7)
electric—see alternating-current motor; induction motor
synchronous, to improve power factor, FSP-50-41(183)
truck aids railroad, RR-50-7(32)
truck and L.C.L. freight, RR-50-7
truck and railroad, RR-50-1(4); RR-50-7(30-31)
truck and unit container, RR-50-7(31)
truck to short haul, RR-50-7(32)
Motorship details and performance, OGP-50-8 (21-25)
MOULDER, A. W. The welding of power-plant piping, FSP-50-48
MOULTROP, I. E. Centrifugal pumps (D), HYD-50-4
High-pressure steam at Edgar station, FSP-50-30
High-pressure steam boilers (D), FSP-50-32
Some factors in furnace design for high capacity (D), FSP-50-78
Some economic factors in power-station design (D), FSP-50-40
and NORRIS, E. W. High-pressure steam at Edgar station, FSP-50-30
and SEABURY, GEORGE E. Some economic factors in power-station design (D), FSP-50-40
MULLER, JULES. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
MULLIN, ED. F. Bulk-material handling at docks and storage plants (D), MH-50-6
MUMFORD, ALBERT R. Collecting the dust from chimney gases of powdered-fuel installations (D), FSP-50-59
Present tendency of boiler-water conditioning (D), FSP-50-58
MURRAY, H. H. The manufacture of seamless tubes (D), IS-50-7
Museum, industrial, MAN-50-1(6)

N

NADAI, A. Strength of steel columns (D), APM-50-9
N.A.C.A., oil-spray investigations of, OGP-50-6
test equipment, AER-50-11(21-22)
Navy, aeronautical activities of, AER-50-1(6-7)
NEBESAR, ROBERT J. The theory of long-distance flight, AER-50-21
Needle valve, Johnson, HYD-50-1(4)
NEWMAN, WILLIAM A. The manufacture of nickel-steel plate (D), IS-50-10
Newsprint production in U. S., WDI-50-3(2)
production, power needed for, PI-50-2(9)
NEWTON, H. W. Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
Washing and preparation of coal (D), FSP-50-53
New York University, aeronautical engineering curricula, AER-50-2(1)
Daniel Guggenheim school of aeronautics, AER-50-2(1)
Niagara Falls, improvements, model of, HYD-50-1(4)
NIBBS, ERNEST. Diesel-fuel-oil specifications (D), OGP-50-10
NICHOLAS, A. J. Measurement of flow of air and gas with nozzles (D), APM-50-3
The use of pulverized coal in basic open-hearth furnaces, (D), FSP-50-36; IS-50-5
NICHOLLS, P. Problems and methods in smoke-abatement work (D), FSP-50-77
Progress in gas-producer practice (D), FSP-50-12

NICHOLLS, P. (*continued*)
Smokeless and efficient firing of domestic furnaces—part II (D), FSP-50-76
The clinkering of coal ash as related to laboratory fusibility determinations, FSP-50-6
The use of fuels in tunnel kilns (D), FSP-50-56
NICHOLSON, J. M. The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
Nickel alloys with iron in all proportions, IS-50-6(9)
steel—see steel, nickel
Nickeloy for power transformers, IS-50-6(13)
hysteresis of, IS-50-6(13)
radio-transformer cores of, IS-50-6(13)
Nitration process of hardening steel, OGP-50-1(3)
Nitric acid industry, FSP-50-27(11)
Nitride hardened steel, OGP-50-7(5)
Nitrogen from air, FSP-50-27(11)
Noise in machinery and its reduction, APM-50-6(1)
reduction, MAN-50-1(5)
NOLAN, J. C. Railway smoke abatement (D), FSP-50-19
NORCROSS, T. W. Locomotive sparks (D), RR-50-13
Normal air, APM-50-3(3)
NORMAN, C. A. A comparative examination of the airplane and the airship (D), AER-50-20
NORRIS, CHARLES B. Engineering characteristics of plywood (D), WDI-50-13
Static loads upon bus bodies, WDI-50-6
Wood-burning furnaces (D), WDI-50-16B
NORRIS, E. W. High-pressure steam boilers (D), FSP-50-32
and MOULTROP, I. E. High-pressure steam at Edgar station, FSP-50-30
NORTHAM, C. D. Combination firing of blast-furnace gas and pulverized coal (D), FSP-50-35
The use of pulverized coal in basic open-hearth furnaces (D), FSP-50-36; IS-50-5
NORTON, A. E. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
NORTON, F. H. The work required to operate several makes of typewriters, MAN-50-18
Nozzle, air constants for, APM-50-3(5-6)
apparatus and observations, APM-50-3(3-6)
arrangement diagrams, APM-50-3(2)
calibrated against gas holder, APM-50-3(13)
correction factors, APM-50-3(9-10)
critical pressure in, APM-50-3(5, 6)
discharge coefficient close to unity, APM-50-3(1, 11, 14, 15)
flow formula, APM-50-3(7-9, 13)
flow-formula bibliography, APM-50-3(8)
flow formulas, comparison of, APM-50-3(7)
infinite reservoir on high pressure side of, APM-50-3(4)
for measurement of air flow, APM-50-3
limitations, APM-50-3(11)
parallel portion preceding, APM-50-3(1)
research by Bureau of Standards, APM-50-3(13)
shape, APM-50-3(1-3)
size of pipe preceding, APM-50-3(1)
static hole near, APM-50-3(3)
tests, humidity correction for, APM-50-3(5)
tests of air flow, APM-50-3(11)
velocity limit, APM-50-3(15)

O

OAKLEY, WALTER W. Boiler-furnace refractories (D), FSP-50-64
Industrial-furnace efficiency, economic consideration (D), FSP-50-55
OATLEY, H. B. Back pressure and cut-off adjustment for the locomotive (D), RR-50-5
Heating and ventilating of passenger cars (D), RR-50-6
High steam pressures in locomotive cylinders (D), RR-50-4
OBERG, ERIK. Some practices in the use of machine tools in the electrical industry (D), MSP-50-18
OBERT, C. W. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
Obsolescence, MAN-50-1(2); MAN-50-10(73)
ODENATH, H. E. Handling methods and equipment in a large mail-order house, MH-50-9
Office layout, efficient, MAN-50-17A(26)
Oil- and gas-power engineering, progress in, OGP-50-1
and pulverized-coal combination burner, FSP-50-66(135)
as fuel, FSP-50-13
as marine fuel, FSP-50-67(143)
atomizer, mechanical, FSP-50-13(105)
atomizer, mechanical vs. steam, FSP-50-13(106)
burner affected by viscosity, FSP-50-13(111-112)
burner applied to switch locomotive, FSP-50-13(112, 113)
burner arranged to produce own draft, FSP-50-13(107)
burner, brass vs. iron, FSP-50-68(155)
burner, domestic, FSP-50-13(104)
burner, draft for, FSP-50-13(107)
burner firebrick settings, FSP-50-13(108)
burner for locomotive, FSP-50-68(149)
burner installations, FSP-50-13(109, 110)
burner, Peabody-Fisher, FSP-50-13(112)
burner, Von Boden-Ingles, FSP-50-68(149)
burner with automatic control, FSP-50-13(106)
burning ships in majority, FSP-50-67(143)
by air lift, PET-50-1(1)
combined with other fuels, FSP-50-13(109-110)
composition, FSP-50-81(314)
conservation, PET-50-1(5)
conservation on railroads, FSP-50-68(151)
consumption, domestic, charts for, PET-50-4
cooling formulas and tests, PET-50-2
crude, transportation progress, PET-50-1(5-6)
deep-well drilling problems, PET-50-1(2)
distribution, FSP-50-13(103)
engine, engines—see also Diesel engine: engine advantages in aircraft, AER-50-11(17-18)
engine and aeronautics, AER-50-17
engine, aircraft, AER-50-23
engines, adaptable to two-stroke cycle, AER-50-11(18-19)
engines, aircraft, combustion in, AER-50-11
engine, auxiliary combustion chamber, AER-50-23(47-48)
engine bibliography, AER-50-11(22)
engine combustion control, AER-50-11(17)
engines, combustion of heavy fuels in, AER-50-11(18)
engines, compared with carburetor engines, AER-50-11(18)
engine economy, AER-50-23(48)
engine, experimental, tests results, AER-50-23(46)
engine fuel valves, AER-50-23(48)
engines, high cycle efficiency of, AER-50-11(18)
engines, high-speed, AER-50-11
engine, higher speed trend, OGP-50-1(1)
engine indicator diagrams, AER-50-23(49)
Oil (*continued*)
engines, mechanical simplicity of, AER-50-11(18)
engine, oil-spray studies for, AER-50-23(48-49)
engine performance, AER-50-11(19-21); OGP-50-6(1)
engine progress, AER-50-11(17)
engine, scavenging, AER-50-23(48, 50)
engine, small fire hazard in, AER-50-11(18)
engine, solid-fuel-injection problems, AER-50-18
engines, spray fuel injection into, OGP-50-6
engine, two-stroke, AER-50-23(47, 50)
film causes rotor vibration, APM-50-16(77)
film viscosity, PET-50-2(18)
fire hazard, FSP-50-68(148)
fired boiler efficiencies, FSP-50-13(106)
flame impingement, FSP-50-13(107-108)
for domestic heating, FSP-50-76(231)
for tunnel kiln, FSP-50-56(44)
fractionating tower, PET-50-1(8)
from K.S.G. carbonization, FSP-50-28(22)
fuel, FSP-50-72(187)
fuel and refractories, FSP-50-81
fuel for railroad, FSP-50-68
furnace, water-cooled, FSP-50-78(263-265)
gear motor, MSP-50-4(36, 40-41)
heat transfer from, optimum, PET-50-2
heating formulas and tests, PET-50-2
high-pressure recording indicator for, OGP-50-12
high-pressure tests of, APM-50-4(1, 2-5)
hole, stress concentration at, APM-50-8(48)
industry and mechanical engineer, PET-50-1(1)
industry and steam power, PET-50-1(8-9)
industry, gas-engine drive for, PET-50-1(8)
injection, OGP-50-6
injection by jerk pump, AER-50-23(45)
injection into air, OGP-50-6(2)
injection into liquids, OGP-50-6(2)
lost to neighbor, PET-50-1(1)
motor, MSP-50-4(36, 40-41)
motor, variable-stroke, constant output, MSP-50-4(36)
oiliness of, APM-50-4(1)
pipe cleaning machine, PET-50-1(5)
pipe line vs. tank car, PET-50-1(6)
pipe-line transportation, PET-50-1(5)
pool control, PET-50-1(1)
past and future, FSP-50-2(5-6)
potential supply, FSP-50-67(144)
power engineering progress, OGP-50-1
pressure indicator, recording, AER-50-23(49)
production, FSP-50-13(103); FSP-50-68(147)
production, gas lift as applied to, PET-50-3
production progress, PET-50-1(1-2)
properties, FSP-50-81(314)
pumping by electricity, PET-50-1(5)
pumping compared with gas lift, PET-50-3(21)
pumping cost, centrifugal vs. plunger pump, OGP-50-15(81); PET-50-7(23)
refining, for railroad, FSP-50-68(147-148)
refining progress, PET-50-1(6-7)
rig and field equipment progress, PET-50-1(2)
specifications, FSP-50-68(148)
-spray bibliography, OGP-50-6(8, 10)
sprays for fuel-injection engines, study by means of high-speed motion pictures, OGP-50-3
spray in Diesel engine, OGP-50-8(18)
spray injection into engines, OGP-50-6
spray investigations of N.A.C.A., OGP-50-6
spray motion pictures, OGP-50-3
spray observation, visual, OGP-50-3(7-9)
spray photographs under various conditions, OGP-50-6(4-7); OGP-50-9(32-33)
spray photography, OGP-50-2(3); OGP-50-6(2-3)

Oil (*continued*)
spray research, type of nozzle used, OGP-50-12(66)
spray research, visual, OGP-50-12
spray stroboscope, OGP-50-12(67)
spray studies, AER-50-23(48-49)
spray tests results, OGP-50-6(3-9)
still control instruments, PET-50-1(7)
still data now available, PET-50-1(6-7)
still designed for greatest heat economy, PET-50-2(18)
still, electric-fused welded, PET-50-1(7)
still, forge-welded, PET-50-1(7)
still fuel savings, PET-50-1(6-7)
still, heat exchange in, PET-50-2
still, metals and alloys for, PET-50-1(7)
still problems, PET-50-1(7)
still, processes, PET-50-1(7-8)
still, radiation of heat in, PET-50-2(18-19)
still safety, PET-50-1(7)
sulphur in, effects of, FSP-50-67(144)
supply, FSP-50-13(103)
tank, breather roof, PET-50-1(5, 6)
tank, customer's, keeping full, PET-50-4(3-4)
tank, lightning protection, PET-50-1(5)
tanker, Diesel-driven, PET-50-1(6)
transportation equipment conservation, PET-50-1(5)
used as fuel in Diesel engine, FSP-50-13(103-104)
used as fuel in domestic burners, FSP-50-13(104)
used in locomotive firing, FSP-50-13(104-105)
vacuum distillation, PET-50-1(8)
vs. coal for kilns, FSP-50-56(50)
vs. coal for locomotives, FSP-50-68(150-151)
viscosity and heat transfer, PET-50-2
well and corrosion, PET-50-1(1-2)
well, deep, PET-50-1(2)
well drilling by electricity, PET-50-1(2)
well machinery, high-speed bearings for, PET-50-1(2)
-well production-decline curves, PET-50-3(21)
Olander, D. Engineering characteristics of plywood (D), WDI-50-13
Oleo gears—see airplane landing gears; aircraft, oleo gears for,
Operation chart, brass mill, MAN-50-4(24)
Operating costs of electric industrial trucks and tractors, MH-50-3
data of large steam generating units, some, FSP-50-34
expense and production volume, MAN-50-9(59)
ratio, comparison of monthly, MAN-50-5a(34)
Optical instrument manufacturing conditions, MAN-50-7(45-46)
instrument quality control, MAN-50-7
ordering quantity, minimum, MAN-50-6(41-42)
Ore-handling bridge, MH-50-6(4)
unloader, MH-50-6(2-3)
unloading records, MH-50-6(5)
Order and production curves, MAN-50-4(22)
balance, MAN-50-4(21-22)
Ordering of materials, MAN-50-2(9)
Orifice—see also nozzle
coefficients, OGP-50-1(3)
diameter for steam, chart for, FSP-50-79(295)
for steam-flow measurement, FSP-50-79
in thin plate, APM-50-3(1, 11, 13)
Ormondroyd, J., and Den Hartog, J. P. The theory of the dynamic vibration absorber, APM-50-7
Ormsby, Erle. Organizing a smoke-abatement campaign (D), FSP-50-22
Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
Orrok, Geo. A. Combustion and heat transfer (D), FSP-50-3
Fuels, past and prospective (D), FSP-50-1
High-pressure steam boilers, FSP-50-32
High-pressure steam at Edgar station (D), FSP-50-30
High steam pressures in locomotive cylinders (D), RR-50-4
Some factors in furnace design for high capacity (D), FSP-50-78
Some operating data of large steam generating units (D), FSP-50-34
The characteristics of modern boilers (D), FSP-50-9
The economics of coal carbonization in the United States, FSP-50-27
The high cost of fuel saving (D), FSP-50-4
The measurement of atmospheric pollution, visible and invisible (D), FSP-50-20
Orsat readings corrected for SO_2, FSP-50-80(300-302)
Osgood, Wm. R., and Westergaard, H. B. Strength of steel columns, APM-50-9
Otto and Diesel engines, efficiencies of, OGP-50-5
and Diesel cycles, OGP-50-5(19, 21)
cycle, AER-50-17(68)
cycle defined, OGP-50-5(1-2)
-Diesel cycle for high speed, OGP-50-2(1-2)
engine efficiency compared with Diesel, OGP-50-5
engine efficiency judged by various standards, OGP-50-5(8-9)
engine, gas constants, OGP-50-5(3)
engine, ideal efficiency, OGP-50-5(3-6)
engine, mean effective pressures, OGP-50-5(10)
engine, need for standard of comparison for, OGP-50-5(10-11)
engine performance, OGP-50-5(11–13)
engine, proposed rating, OGP-50-5(7)
engine thermodynamics, OGP-50-5
engine, variable specific heat of gas in, OGP-50-5(14, 16, 17, 19, 20, 22)
Output and sales, MAN-50-9(59)
stabilizing, MAN-50-9(59)
Oven, enameling, MH-50-10(26)
Overhead control, MAN-50-9
Overmire, W. J. Railway practice in utilization and conservation of coal, FSP-50-74

P

Packard, J. S. Symposium on shop-equipment maintenance (D), MSP-50-3
Padder, simplifying operation of, TEX-50-1
Page, F. Handley. Slotted wings, AER-50-22
Paint and smoke damage, FSP-50-75(216-217)
handling, MH-50-4(5)
Pantone lithographic process, PI-50-10(36, 37)
Paper and printing products handling, MH-50-4(5)
birch tree in State of Washington, WDI-50-7(4)
consumption, WDI-50-7(8-9)
consumption an index of literacy, WDI-50-3(1)
consumption in U. S., WDI-50-3(1-2)
cost reduced by pulp grinder control, PI-50-2
estimated trade areas for 1930, WDI-50-3(2)
for packages, problems of, PI-50-10(36)
from mill waste, WDI-50-7(4)
industry in State of Washington, WDI-50-7
industry in the Northwest, WDI-50-3
industry in Washington State, natural advantages, WDI-50-7(10-11)
industry, materials handling, MH-50-1(4-5)
machine, Fourdrinier, WDI-50-7(8)
making, WDI-50-7(7-8)
making, bibliography, WDI-50-3(6)
making, chemical process, WDI-50-7(6)
Paper (*continued*)
making, materials for, WDI-50-7-(1)
making, power, labor, chemical, and water for, in State of Washington, WDI-50-7(4-5)
making processes, WDI-50-3(3)
making, screening loss in, WDI-50-3(5)
making, waste elimination, WDI-50-3(3-6)
mill production in Washington State, WDI-50-7(10)
mill pumping problems, PI-50-1
newsprint production, WDI-50-3(2)
production costs, Washington State, WDI-50-7(10)
production in United States, WDI-50-3(1-2)
pulp—see pulp
stock pumping, PI-50-1
stock, water separates from, in pump, PI-50-1(3-5)
transportation in Washington State, WDI-50-7(10)
Parachute, Russell, AER-50-2(8)
Parker, McRae. Some fundamental considerations in the design of boiler furnaces, FSP-50-39
Parish, William F. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
Parks, Burritt A. Improvements in handling methods in the woodworking industry (D), WDI-50-5
Wood-burning furnaces, WDI-50-16B
Parr, S. W. Fuels, past and prospective, FSP-50-1
Passano, W. M. Coordinating wage incentives and production control (D), MAN-50-3
Passenger cars, heating and ventilating of, RR-50-6
train performance, RR-50-11(15)
Patch drier, TEX-50-1(6)
Patitz, Max. The theory of the dynamic vibration absorber (D), APM-50-7
Patt, Charles B. A materials-handling and transport organization (D), MH-50-8
Pawlowski, Felix W. Discussion of wing flutter, AER-50-10(14-15)
Payne, H. J. Operating costs of electric industrial trucks and tractors, MH-50-3
Peabody, air-flow research, APM-50-3(8)
Peabody, Ernest H. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station, FSP-50-10
The burning of liquid fuel, FSP-50-13
Peak-load manufacturing investment, MAN-50-7(44)
Pearce, E. S. Back pressure and cut-off adjustment for locomotive (D), RR-50-5
Peat, FSP-50-52(13–14)
Peck, C. B. Locomotive and freight-car utilization, RR-50-11
Peebles, T. A. Automatic combustion control, FSP-50-14
Peets, W. J. Symposium on hydraulic feeds for machine tools (D), MSP-50-4
Pendleton, D. D. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
Pendred, Loughnan. High-pressure steam at Edgar station (D), FSP-50-30
The economics of coal carbonization in the United States (D), FSP-50-27
Penstock, Birnie's formula applied to, IS-50-3-(2, 4, 7, 10)
calculated by maximum shear theory, IS-50-3(8)
calculated by thin cylinder theory, IS-50-3(8-9)
cold worked during test, IS-50-3(5)
destruction test of 66-inch forged steel, IS-50-3
destruction test, safety considerations, IS-50-3(3-4)
ductile, advantages, IS-50-3(9)
ductility and water hammer, IS-50-3(8)

Penstock (*continued*)
electric expansion indicator for, IS-50-3(3)
fracture, IS-50-3(5-7)
safe construction, HYD-50-1(3)
safety factor, IS-50-3(10)
stress distribution in, IS-50-3(9)
test apparatus, IS-50-3(1, 4)
test compared with autofrettage, IS-50-3(7, 8-9)
test, manufacture of, IS-50-3(2)
test results, IS-50-3(4-7)
Percolation, definition, FSP-50-46(219)
Performance chart (in production control), MAN-50-3(13)
PERKINS, GEORGE H. Comparative performance of looms with plain and roller bearings, TEX-50-3
Control of factory overhead, MAN-50-9
Permalloy for submarine cables, IS-50-6(13)
Permanent molding in electrical industry, MSP-50-18(26)
PERRY, THOMAS D. Automatic production of small wood parts (D), WDI-50-15
Change in moisture content of lumber during rail shipment (D), WDI-50-8
Compressive tests of balsa wood (D), WDI-50-12
Engineering characteristics of plywood, WDI-50-13
Improvements in handling methods in the woodworking industry (D), WDI-50-5
Personnel department, MAN-50-11(5)
for maintenance work, MSP-50-3(21-22)
selection for training courses, MAN-50-11
PETER, A. G. The control of quality in a manufactured product (D), MAN-50-13
Petroleum—see also oil
distillation apparatus, PET-50-5
distillation curves, PET-50-5(11-12)
industry and the Diesel engine, OGP-50-9(31)
industry, distillation in, PET-50-5
industry, fractionation in, PET-50-5
production, mechanical equipment for, PET-50-1(2)
progress, PET-50-1
situation, FSP-50-25(4)
transportation by centrifugal pump, OGP-50-15; PET-50-7
vital to lubrication, FSP-50-2(6)
PETTIBONE, W. W. Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
The use of fuels in tunnel kilns (D), FSP-50-56
Washing and preparation of coal (D), FSP-50-53
PHELPS, STUART M. Properties of refractories and their relation to conditions in service, (D), FSP-50-8
Photo composing, PI-50-7
composing, chemistry of, PI-50-7(22)
composing, economy of, PI-50-7(23)
-mechanical imposition, PI-50-7
Photoelasticity, APM-50-16(71-72, 78)
Photograph, natural-color, PI-50-9(30-31)
Photographic plate made sensitive to color, PI-50-9(30)
plate made sensitive to infra-red, PI-50-9(30)
Photography for color reproduction in graphic arts, PI-50-9
Photogravure, PI-50-9(30); PI-50-10(37)
color, PI-50-9(32)
Physical examination, MAN-50-17A(25)
PIACITELLI, JOS. A. An application of motion study to group work in industry, MAN-50-17B
PICK, ERIC. A graphical method of computing boiler heat balance, FSP-50-80
Piece-work rate not used when 100 per cent perfection is called for, MAN-50-7(52)
Pier—see also dock
too small for ship's cargo, MH-50-11(3)
PIERCE, HOMER R. Progress in the production of oil, PET-50-1
Pig iron production compared with coke, FSP-50-27(10-11)
PIGOTT, R. J. S. Cooperative Diesel-engine research (D), OGP-50-9
General heat-transfer formulas for conduction and convection (D), PET-50-2
Some economic factors in power-station design (D), FSP-50-40
Pine tree in State of Washington, WDI-50-7(3)
PINNIGER, H. G. Locomotive sparks (D), RR-50-13
Pipe bends, anchorage stresses, FSP-50-49(261)
bends, application of theory, FSP-50-49(250-251)
bends by Castigliano's theorem, FSP-50-49(244-247)
bends, calculations based on deformation of pipe elements, FSP-50-49(243-244)
bends, cold springing stresses, FSP-50-49(261)
bends, comparison of test and theory, FSP-50-49(249-250)
bends, cross-sectional distortion measurements, FSP-50-49(261)
bends of, FSP-50-47(243-247)
bends, effect of straight pipe on, FSP-50-49(257)
bends, flexibility due to wrinkles, FSP-50-49(255-256)
bends, flexibility of different shapes, FSP-50-49(256)
bends, investigations, FSP-50-49(256)
bends, model tests, FSP-50-49(257)
bends, moments, deflections, and reactions in, FSP-50-49(243-247)
bends of flattened cross-section, stress in, FSP-50-49(241–242)
bends, reaction of, FSP-50-49
bends, steam pressure and flattening of, FSP-50-49(242)
bends, stress analysis, FSP-50-49(247–250)
bends, stress distribution in, FSP-50-49(242-243)
bends, stress formulas, FSP-50-49(253-255)
bends, stress tests, FSP-50-49(249-250)
bends, stresses and reactions in, FSP-50-49
bends, test set up for models, FSP-50-49(260)
bends, tests, FSP-50-49(257-259)
bends, turbine expansion, formulas, FSP-50-49(252-253)
dredge, friction in, HYD-50-7
dredge, friction tests correlated with mathematical theory, HYD-50-7(21-22)
joint, Sargol, FSP-50-31(43)
line, arc-welded, FSP-50-47
line, arc-welded, for gas, FSP-50-47(234)
line, arc-welded, for water supply, FSP-50-47(233)
line, arc-welded, making field joints in, FSP-50-47(233)
line, arc-welded, manufacture, FSP-50-47(233)
line cleaning machine, PET-50-6(19)
line coating, graveyard for testing, PET-50-6(19)
line construction and protection, PET-50-6
line, expansion allowance, PET-50-6(15)
line gangs, good living conditions for, PET-50-6(16)
line laying, speed needed, PET-50-6(18)
line extra heavy under river, PET-50-6(16)
line joint welding, PET-50-6(14)
line, oil and gas, protection of, PET-50-6
line, painting, with protective coating, PET-50-6(15, 17-19)
line, power-plant, welding of, FSP-50-48
Pipe (*continued*)
line protection against soil corrosion, PET-50-6(16-17)
line, pumping stations built at same time as, PET-50-6(16)
line reconditioning expensive, PET-50-6(19)
line river crossings, PET-50-6(15-16)
line stringing, PET-50-6(14)
line systems, magnitude of, PET-50-6(13)
line under river bowed upstream, PET-50-6(16)
line velocity by salt solution method, HYD-50-7(17-18)
line wrapping, PET-50-6(18)
steam—see steam pipe
Pistons for aircraft engines, AER-50-7(3-6)
traverse not considered necessary with salt solution velocity method, HYD-50-7(22)
Pivot valve, 27 ft., Conowingo, HYD-50-1(2)
Planer, electric reverse system for, MSP-50-4(56)
electric vs. hydraulic reverse for, MSP-50-4(57)
Planing and milling compared in electrical industry, MSP-50-18(25-26)
PLANT, L. G. Railway smoke abatement (D), FSP-50-19
Plant and equipment budget, MAN-50-5a(34)
bulletin service, MAN-50-11(3, 4)
capacity, idle, MAN-50-10(78)
location, industrial, MAN-50-15
maintenance and return on capital investment, MSP-50-3(19-22)
Plasticizer for lacquer and varnish, WDI-50-4(1)
Plumbing for airport, AER-50-8(4)
Plymetal, WDI-50-13(7)
Plywood a sound insulator, WDI-50-13(4, 10)
combined with metal, WDI-50-13(7)
compared with steel, WDI-50-13(4)
construction types, WDI-50-13(6-7)
cracks produced in manufacture of, WDI-50-13(2)
drying, WDI-50-13(10)
eliminates waste, WDI-50-1(2)
engineering characteristics of, WDI-50-13
for furniture, WDI-50-13(2)
glues used in, WDI-50-13(1-2)
handling methods, WDI-50-5(4)
impregnation, WDI-50-13(10)
manufacture, WDI-50-13(2-4)
properties, data, WDI-50-13(2-3, 5, 6, 7, 8)
standards needed, WDI-50-13(9-10)
stress in, WDI-50-13(9)
terminology, WDI-50-13(10)
testing, WDI-50-13(7-8)
use of albumin glue in, WDI-50-13(9)
uses, WDI-50-13(4-5)
veneers used in, WDI-50-13(1)
waterproofing, WDI-50-13(2)
waterproof glue for, WDI-50-13(1-2)
Pneumatic conveyor, MH-50-1(4)
and smoke, FSP-50-24(185-187); FSP-50-75(219)
POHLMAN, A. G. The effect of atmospheric smoke pollution (D), FSP-50-24
POLAKOV, W. N. High-pressure steam in Edgar station (D), FSP-50-30
The economics of coal carbonization in the United States (D), FSP-50-27
POLHEMUS, JAMES H., and DUPRIEST, JOHN R. Friction in dredge pipes, HYD-50-7
Polishing, abrasives for, MSP-50-6(72)
absence of vibration needed for, MSP-50-6(70)
automatic, production of, MSP-50-6(70-71)
costs, MSP-50-6(75)
department should be clean and well located, MSP-50-6(70)
design of article for, MSP-50-6(69)
dust collection in, MSP-50-6(70)

Polishing (*continued*)
high cost of, MSP-50-6(69)
machine with ball bearings, MSP-50-6(75)
machines, MSP-50-6(70-71)
preparing flat parts for, MSP-50-6(75)
sheet stock, MSP-50-6(75)
relation of previous processes to, MSP-50-6(69-70)
successful, MSP-50-6
tools, MSP-50-6(71)
wheel, characteristics and types, MSP-50-6(71-72)
wheel, glue for, MSP-50-6(73-74)
wheel standardization, MSP-50-6(74-75)
POLLISTER, EDWARD B. The economic field for large Diesel engines, OGP-50-11
POPE, JOSEPH. The economic field for large Diesel engines (D), OGP-50-11
Porcelain factory, payment plans in, MAN-50-12
inspection by visual electrical, and dye penetration means, MAN-50-12(14)
Port survey and plant location, MAN-50-15(10)
PORTER, DAVID B. Production control in a wrought-brass mill (D), MAN-50-4
PORTER, FREDERIC P. Range and severity of torsional vibration in diesel engines, The, APM-50-8
Stresses in the drive system of three-cylinder locomotives (D), APM-50-13
PORTER, H. C. Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
Present status of furnace and burner design for use of pulverized fuel (D), FSP-50-72
Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57
PORTER, HOLLIS P. Development of mechanical equipment for petroleum production, PET-50-1
Portland cement plant, pulverized coal in, FSP-50-52(22, 24)
Post Office Department weather stations, AER-50-13(49)
POTCHEN, JOSEPH A. Static loads upon bus bodies, WDI-50-6
POTTS, M. W. Materials handling as an aid to production (D), MH-50-4
Operating costs of electric industrial trucks and tractors (D), MH-50-3
Pour test of oil, APM-50-1(10)
Powdered coal—see coal, pulverized
POWELL, S. T. Present tendency of boiler-water conditioning (D), FSP-50-58
Progress report of the boiler-feedwater studies committee, FSP-50-46
POWER, P. W. A materials-handling and transport organization (D), MH-50-8
Power factor improved by electric furnace, FSP-50-55(41)
Factor, low, penalties for, FSP-50-40(183)
loss in paper making, WDI-50-3(4)
plant, base-load, FSP-50-40(179)
plant, capacity factor, FSP-50-40(170, 179)
plant contract procedure, FSP-50-63(107)
plant, cost of, FSP-50-40(164-166)
plant, economical generator loading, FSP-50-42(198)
plant equipment, economic value, FSP-50-63
plant equipment, installation cost, FSP-50-42(199)
plant equipment, rules for selection of, FSP-50-42(196)
plant equipment selection, FSP-50-42; FSP-50-63
plant equipment selection and manufacturer's reputation, FSP-50-63(112)
plant equipment selection, good judgment in, FSP-50-63(111, 112, 113)
plant equipment value criteria, FSP-50-63(107-108)
Power (*continued*)
plant, expected performance data, FSP-50-42(197-198)
plant, high-pressure, arrangement of, FSP-50-40(173-175)
plant, high-pressure, cost of, FSP-50-40(175-176)
plant, high-pressure, regenerative, FSP-50-40(173)
plant, industrial, modernization of, FSP-50-41
plant interconnection cuts down fixed charges, FSP-50-40(171)
plant load curve basis for equipment selection, FSP-50-42(193)
plant load curves, FSP-50-42(194, 195)
plant load-duration curves, FSP-50-42(196-197)
-plant piping, welding of, FSP-50-48
plant rejuvenation, FSP-50-40(179)
plant, types of units for, FSP-50-40(164)
plant units, thermal economy of 60,000 kw., FSP-50-40(162)
production economy in boiler plant, FSP-50-14(115)
-shovel progress, MH-50-1(4-5)
station—see also power plant
station, auxiliary drive for, FSP-50-40(166)
station, auxiliary power in, FSP-50-40(166)
station, best operating pressure, FSP-50-40(162-164)
-station capacity factor, FSP-50-40(160-161)
station cost per kw., FSP-50-40(171, 177-178)
-station design, FSP-50-40
station design basis, FSP-50-40(162)
station Diesel engines, OGP-50-8(20-21)
station effective life, FSP-50-40(160, 180)
-station fixed charges, FSP-50-40(159-160)
station, heat consumption of, FSP-50-40(168)
station, high-pressure, cost of, FSP-50-40(178-180)
station improvement due to load increase, FSP-50-40(176)
station layout, FSP-50-40(165, 167)
station, maintenance and operation costs, FSP-50-40(168)
station not used to capacity, FSP-50-40(160)
station, operated hours factor, FSP-50-40(161-162)
station, performance and cost trends, FSP-50-40(173)
-supply equipment maintenance, MSP-50-3(20)
supply for freight car retarders, RR-50-12(23)
supply for interlocking system, RR-50-10(5)
transmission equipment maintenance, MSP-50-3(20-21)
POWNELL, W. A. Diesel engines for locomotive (D), OGP-50-4
chamber for Diesel engine, OGP-50-2
Preheated air increases furnace temperature, FSP-50-16(140)
Preheater calculations, FSP-50-16(138-140)
Preheating of air, FSP-50-16
Press, assembling, hydraulic feed for, MSP-50-4(37)
offset, and bronzing, PI-50-6(15-16)
Pressable wax distillate from petroleum, PET-50-5(12)
Pressed-metal parts, MSP-50-1(1)
Pressure conversion factors, inches of water to pounds per sq. in., APM-50-3(10)
Pressure in rolling mills, IS-50-2(1)
vessel, technical worth of welded joints for, APM-50-12(14-23)
PRICE, EDWARD P. Present tendency of boiler-water conditioning (D), FSP-50-58
Priming, FSP-50-46(219-222, 227)
definition, FSP-50-46(219)
Priming (*continued*)
due to suspended solids, FSP-50-46(228)
effect of dissolved salts, FSP-50-46(222)
effect of pressure, FSP-50-46(222)
effect of rate of evaporation, FSP-50-46(222)
effect of suspended solids, FSP-50-46(222)
effect of water level, FSP-50-46(222)
of pumps, HYD-50-4(6-7)
prevention with castor oil, FSP-50-46(222, 227)
Printing at Curtis Publishing Company, PI-50-9(31)
color, PI-50-9
color, devices for, PI-50-9(32)
color, needs accurate register, PI-50-7(21)
color, order of applying different colors, PI-50-9(31)
color, rapid drying with paraffin spray, PI-50-9(31)
colored, commercial and artistic, PI-50-4(6)
of colored pictures, limitations, PI-50-4(5)
four-color, PI-50-9(31-32)
history of, PI-50-5
industries, engineering in, PI-50-3
ink, color standardization for, PI-50-9(31-32)
ink, colored, standardization of, PI-50-4
ink, colors for, PI-50-4(1)
ink, materials for, PI-50-4(1)
over bronze, PI-50-6(18)
plate made by hand transfer, PI-50-7(23)
press progress, PI-50-5(10)
processes, PI-50-9(31)
production records, PI-50-3(22)
research committee, personnel of, PI-50-8(25)
research program, PI-50-8
safety, PI-50-5(10)
of text by photo composition, PI-50-7(21)
three-color process, PI-50-9
Process chart, MAN-50-17A(22)
chart of group work, MAN-50-17B
Producer, gas—see gas producer
-gas firing of boiler, FSP-50-54
gas for brick kiln, FSP-50-11(93)
gas for trucks and tractors, FSP-50-12(101)
gas for tunnel kiln, FSP-50-56(46)
gas from charcoal, coke, and oil, FSP-50-12(100-101)
gas limitations, FSP-50-12(97)
Product, design of, to facilitate handling, MH-50-4(2)
designed for quality control, MAN-50-13
Production, automatic, of small wood parts, WDI-50-15
a game, MAN-50-5B(38)
aided by materials handling, MH-50-4
and order curves, MAN-50-4(23)
and stock curves, MAN-50-10(68-71)
batch, MAN-50-10(66, 70)
budget, MAN-50-5A(32)
capacity, MAN-50-5A(31)
control and quality control, MAN-50-13
control and wage incentive, MAN-50-3; MAN-50-8
control in aluminum company, MAN-50-4(25)
control in rubber industry, MAN-50-2
control in wrought-brass mill, MAN-50-4
control organization, MAN-50-2(11)
control, rubber industry compared with brass, MAN-50-4(25-26)
coordination with sales, MAN-50-4(26)
cost cut by materials handling, MH-50-7(10)
in furniture industry, problems of design for mass, WDI-50-11
increased by hydraulic feed, MSP-50-4(55-56)
materials handling as an aid to, MH-50-4
of cotton padders, increasing, TEX-50-1

Production (*continued*)
of woodworking machines by use of direct-connected alternating-current motors, increasing the, WDI-50-2
quantities, economic, MAN-50-10
promises, living up to, MAN-50-4(25, 26)
schedule, MAN-50-4(23)
speed flexibility, WDI-50-11
stabilizing, MAN-50-4(25)
system, basic contents of, MAN-50-16(15-17)
volume and operating expense, MAN-50-9(59)
Productive ability of individual, RR-50-7(29)
Progress in aeronautics, AER-50-1
in fuel utilization in 1927, FSP-50-25
in gas-producer practice, FSP-50-12
in hydraulics, HYD-50-1
in lubrication research, APM-50-4
in machine-shop practice, MSP-50-1
in management engineering, MAN-50-1
in materials handling, MH-50-1
in oil- and gas-power engineering, OGP-50-1
in refining, PET-50-1
in steam-power engineering, FSP-50-26
in the petroleum industry, PET-50-1
in the production of oil, PET-50-1
in the woodworking industries, WDI-50-1
of the natural-gasoline industry for 1926–27, PET-50-1
report of boiler-feedwater studies committee, FSP-50-46
Promotion and luck, MAN-50-11(5)
Propeller-blade element, aerodynamics of, AER-50-6(2)
cycloidal—see cycloidal propulsion
cycloidal, airship, AER-50-20(19-20)
dynamometer, AER-50-2(4, 6)
screw-type, on swivel, AER-50-12(46, 47)
tests in wind tunnel, AER-50-2(3)
vertical-lift, superior to helicopter, AER-50-6(16)
Propulsion applied to aircraft, cycloidal, AER-50-12
Prosser, C. A. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
Psychological examination, MAN-50-17A
value of budget control, MAN-50-5b
Public-speaking classes in industry, MAN-50-11(5)
utilities and Diesel engines, OGP-50-14
Pugh, A. The manufacture of seamless tubes, IS-50-7
Pulp and paper industry and the Northwest, WDI-50-3
and paper industry in the State of Washington, investigation of the, WDI-50-7
and paper mill using steam accumulator, FSP-50-33(77-78, 81-82)
consumption, WDI-50-7(8-9)
exportation, WDI-50-7(9)
from Washington timber, WDI-50-7(3-4)
grinder control reduces paper costs, PI-50-2
grinder, magazine, WDI-50-3(3)
grinder, Meyer control for, PI-50-2
importation, WDI-50-7(9)
industry in State of Washington, WDI-50-7
industry in the Northwest, WDI-50-3
making, barking drum, WDI-50-7(5-6)
making, mechanical process, WDI-50-7(6-7)
-making processes, WDI-50-7(5)
making, soda chemical process, WDI-50-7(7)
making, sulphate, WDI-50-7(7)
making, sulphite, WDI-50-7(7)
mill location in Washington State, WDI-50-7(9-10)
production, WDI-50-7(8-9)
substitutes for paper making, WDI-50-7(1)
washing loss in paper making, WDI-50-1(5)
wood production, WDI-50-3(2-3)
wood handling, MH-50-1(4)
Pulverized coal—see coal, pulverized
Pump, pumps
automatic variable-delivery, MSP-50-4(35)
boiler-feed, power consumption of, FSP-50-44
centrifugal, HYD-50-4
centrifugal, bearings and glands, HYD-50-4(6)
centrifugal, best efficiency of, HYD-50-4(5)
centrifugal, best entrance velocity, HYD-50-4(4-5)
centrifugal, brake-horsepower against hydraulic energy, HYD-50-3(4)
centrifugal, calculations, HYD-50-4(1-3)
centrifugal, case factor, HYD-50-3(2, 10-11)
centrifugal, compared with centrifugal compressor, HYD-50-3(14, 16)
centrifugal, correlation of impeller and casing, HYD-50-3(9-10)
centrifugal, cut-off, HYD-50-2(7)
centrifugal, design, HYD-50-4(3-7)
centrifugal, efficiency of, OGP-50-15(82)
centrifugal, energy in, HYD-50-3(15-16)
centrifugal, for paper stock, PI-50-1(1)
centrifugal, for paper stock, performance of, PI-50-1(6)
centrifugal, for petroleum transportation, OGP-50-15; PET-50-7
centrifugal, friction loss, HYD-50-2(1, 6-7); HYD-50-4(2-3)
centrifugal, hydraulic efficiency of, HYD-50-3(1, 3-4, 5)
centrifugal, hydraulic losses in, HYD-50-6
centrifugal, hydraulic losses in, new method of separating, HYD-50-2
centrifugal, impeller design, HYD-50-4(5)
centrifugal, impeller, shrouded, HYD-50-4(5)
centrifugal, impeller stresses, HYD-50-4(6)
centrifugal, loss in, due to sudden expansion of pipe, HYD-50-2(5-6)
centrifugal, loss of head in, HYD-50-3(12-14)
centrifugal, minimum pumping speed, HYD-50-4(3)
centrifugal, performance correction factors, HYD-50-3(1-2)
centrifugal, performance curve analysis, HYD-50-3
centrifugal, piping design, HYD-50-4(4-5)
centrifugal, priming apparatus, HYD-50-4(6-7)
centrifugal, purchaser needs complete characteristics, HYD-50-4(7)
centrifugal, real angle of water leaving blades, HYD-50-3(1)
centrifugal, reversed flow in, HYD-50-3(14)
centrifugal, rotation component at entrance, HYD-50-3(2)
centrifugal, separation of hydraulic losses in, HYD-50-2
centrifugal, shock loss, HYD-50-2(1, 5-6)
centrifugal, specific speed, HYD-50-4(3)
centrifugal, 10-in., analysis and tests of, HYD-50-3(8-9)
centrifugal, theories, HYD-50-3(1)
centrifugal, total head equation, HYD-50-3(2-3)
centrifugal, total hydraulic energy, HYD-50-3(4-6)
centrifugal, turbulent flow, HYD-50-2(6)
centrifugal, uses, HYD-50-4(1)
centrifugal, vanes for, HYD-50-4(6)
centrifugal, velocity diagram, HYD-50-4(2)
centrifugal, volute design, HYD-50-4(3-4)
centrifugal, volute vs. guide-vane, HYD-50-4(7)
centrifugal, waterway width in, HYD-50-4(6)
centrifugal, whirl component at exit, HYD-50-3(1-2, 16)
dry-vacuum, reciprocating, FSP-50-43
dry-vacuum, strokes needed to produce different vacuums, FSP-50-43(202)
feed, theoretical work of, FSP-50-44(204)
Pump, pumps (*continued*)
for Benson boiler, FSP-50-30(38-39)
for hydraulic feed-drilling machine, MSP-50-4(50-51)
manganese steel, for ashes, MH-50-12(15)
materials of construction for, HYD-50-4(7)
triplex stuff, for paper stock, PI-50-1(1)
wood-trash, disadvantages, PI-50-1(7)
wood-trash, for paper stock, performance of, PI-50-1
wood-trash, to prevent water separating from paper stock, PI-50-1(3-5)
Pumping problems in paper mills, PI-50-1
Punch press, motor-driven, MSP-50-2(8-9)
Purcell, T. E., and Kreisinger, Henry. Some operating data of large steam generating units, FSP-50-34
Purchase quantities, minimum-cost, determination of, MAN-50-6
Purchasing, human element in, MAN-50-6(43)
Pye, D. R. Heavy-oil engines for aircraft, AER-50-23
Pyrometric cone equivalent, FSP-50-8(54, 55)

Q

Quality control, MAN-50-7; MAN-50-13
control and production control, MAN-50-13
control and specialization, MAN-50-13(18)
control of aircraft-engine parts, MSP-50-15
Quartz, expansion of, FSP-50-8(57)
glass, expansion of, FSP-50-8(57)
Quicklime, definition, FSP-50-46(219)
Quin, E. G. Control of quality (D), MAN-50-7
Quinn, Arthur Mellor. The hydraulic handling of ashes, MH-50-12

R

Radiation calculations, application to furnace design, FSP-50-3(16-18)
calculations for a water-cooled furnace, FSP-50-3(17)
discrepancy between calculations and tests, FSP-50-3(20, 21)
of coal flames, calculation of, FSP-50-3(9-18)
of gases in coal, FSP-50-3(11-14)
loss in industrial furnace, FSP-50-55(38)
Radiating surface in railroad car, RR-50-6(23)
Radio beacons for airways, AER-50-1(6)
for railway yard, RR-50-12(25)
plant, inspection in, MAN-50-7(50)
Radiator, automobile, uses extruded copper tubes, MSP-50-9(96)
Raetz, S. J. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
Rail—see steel rail
car, Diesel, OGP-50-8(12-13, 14); RR-50-1(4)
Railroad, railroads—see also railway
accident prevention, RR-50-3
advancement slow in, RR-50-2(10)
and air transportation, RR-50-1(4)
and coal sizes, FSP-50-73
and fuel-supply location, FSP-50-68(156)
and Government, RR-50-1(2); RR-50-2(11)
and iceless refrigeration, RR-50-1(4)
and motor-truck, RR-50-1(4); RR-50-7(30-31)
automatic signaling for, RR-50-1(2)
bibliography, RR-50-1(5-7)
brake research, RR-50-1(4-5)
bridge, impact on, RR-50-9(53)
bridge, maximum deflection, RR-50-9(55)
bridge, resonance of, RR-50-9(54, 59)
bridge, static-dynamic deflection ratio, RR-50-9(58)
bridge, vibration calculations, RR-50-9(56-60)
bridge, vibration of, RR-50-9

Railroad, railroads (*continued*)
bridge vibration under steam and electric locomotives, RR-50-9(61)
bridge, weak laterally and torsionally, RR-50-9(61)
-car heating, RR-50-1(2)
-car heating, automatic temperature regulation, RR-50-6(24-25)
-car heating and ventilation, RR-50-6
-car heating boiler, electric, poor economy of, RR-50-6(26)
-car heating by superheated steam, RR-50-6 (25-26)
-car heating, rubber hose unsatisfactory for, RR-50-6(21)
-car heating spoiled by undersized couplings, RR-50-6(21-23)
-car heating, vapor system, RR-50-6(23-25)
-car heating with various sizes of pipe, RR-50-6(22)
car, impact of flat wheel, RR-50-9(55-56)
car, refrigerator, insulation research on, RR-50-1(2)
car, self-propelled, RR-50-1(2)
-car ventilation, air flow through ventilators, RR-50-6(25)
career, advantages of college education in, RR-50-2(14-16)
career, length of time to reach given position, RR-50-2(11-15)
career, opportunity data, RR-50-2(11-15)
cars, more efficient utilization, RR-50-7(32)
classification yard, switches in, RR-50-12 (23-24)
-coal consumption, FSP-50-74(209)
compared with other industries, RR-50-2 (10-11)
draft-gear tests, RR-50-1(4)
economics, RR-50-1(2)
efficiency, RR-50-1(1)
employment, information sources, RR-50-1 (18-19)
forgings of nickel steel, IS-50-6(10-11)
fuel economy, RR-50-1(1)
industry, mechanical engineer in, RR-50-2
inspection of coal source, FSP-50-69(157, 160)
interlocking operated by storage battery in emergency, RR-50-10(5)
investment, FSP-50-68(147)
mechanical engineering, cooperative education in, RR-50-1(4)
mechanical engineering progress, RR-50-1
modern speeding up of, RR-50-11(17)
needs fuel department, FSP-50-74(209)
New England, oil for, FSP-50-68(155)
oil fuel for, FSP-50-68
oil vs. coal for, FSP-50-68(155)
presidents, careers of, RR-50-2(11-15)
professional service, sub-committee personnel, RR-50-1(16-17)
promotion delayed by seniority, RR-50-2 (13-14)
promotion of college man in, RR-50-2(12-13)
promotion statistics, RR-50-2(11-15)
right-of-way cleaning and fireproofing, RR-50-13(36-37)
safety, RR-50-1(1)
should be taxed fairly, RR-50-7(32)
smoke, FSP-50-21(167-168)
smoke abatement, RR-50-1(4)
statistics, RR-50-1(1)
supply career, opportunity data, RR-50-2 (11-15)
supply companies classified, RR-50-2(12)
-supply industry has much real engineering work, RR-50-2(10)
-supply industry, mechanical engineer in, RR-50-2
-supply promotion statistics, RR-50-2(11-15)
switch, electrical interlocking for, RR-50-10
switch machine, RR-50-10(2-3)
Railroad, railroads (*continued*)
switch-operating mechanisms, RR-50-12(23-24)
switch, remote control of, FSP-50-68(154)
technical man in, helps raise technical training standard, RR-50-2(27)
technical training, RR-50-1(2)
-track circuits in interlocking system, RR-50-10(4)
-track defects, impact due to, RR-50-9(55-56)
train, heating of long, RR-50-1(5)
-training courses, data, RR-50-2(19-26)
uses of nickel steel, IS-50-6(13-14)
Railway materials handling, MH-50-1(5)
smoke abatement, FSP-50-19
yard, humping, RR-50-12
yard, humping, early installations, RR-50-12 (29)
yard, skate and skate machine for, RR-50-12 (24, 25)
Ramp, effect on, on trucking costs, MH-50-3(5)
RANDALL, GUY B. Some factors in furnace design for high capacity (D), FSP-50-78
Rapid traverse, hydraulic, MSP-50-4(44-45)
Rate setting, MAN-50-12(11-12)
RAY, J. G. Preparation of an airline for commercial operations, AER-50-24
Rayleigh's method for vibration study, APM-50-16(57, 71)
RAYMANT, FRANK G. Materials handling as an aid to production (D), MH-50-4
RAYMOND, FAIRFIELD E. Economic production quantities, MAN-50-10
READ, T. R. Increasing the production of cotton padders (D), TEX-50-1
Reagent, definition, FSP-50-46(219)
Real-estate survey and plant location, MAN-50-15(10-11)
RECORD, SAMUEL J. Our need for knowledge of tropical timbers, WDI-50-10
Recuperator design, FSP-50-55(39-40)
Red alder tree in Washington State, WDI-50-7(4)
REED, S. ALBERT. Technical development of the Reed metal propeller, AER-50-25
Reforestation, WDI-50-10(13, 15); WDI-50-7(2-3)
Refractories, air-cooled and solid, FSP-50-64(118)
analysis difficulties, FSP-50-64(123)
and combustion rates, FSP-50-38(135-136)
and long-flame burners, FSP-50-38
and oil fuel, FSP-50-81
and powdered Illinois coal, FSP-50-38
and their relation to conditions in service, properties of, FSP-50-8
best composition of, FSP-50-64(116-117)
carborundum, FSP-50-8(58); FSP-50-25(1)
chemical composition of, FSP-50-8(55)
compared, FSP-50-78(268-269)
conductivity of, FSP-50-8(55)
confinement of heat by, FSP-50-8(54-55)
data and tests, FSP-50-64
destruction of, FSP-50-38(138-139); FSP-50-78(253-270)
effect of titanium oxide in, FSP-50-64(123-124)
effect of various thicknesses of, on water-wall, FSP-50-39(150)
effect of varying thickness of, on energy release, FSP-50-39(151)
expansion in, FSP-50-64(120)
expansion of, due to allotropic forms of silica, FSP-50-8(57)
failure due to fly ash, FSP-50-64(116)
for glass furnaces, FSP-50-55(40)
for oil-burning locomotives, FSP-50-68(150)
heat transfer in, FSP-50-8(57); FSP-50-78 (283)
load-test data at various temperatures, FSP-50-8(54)
maintenance of, by cooling, FSP-50-10(78)
melting of, FSP-50-8(55)
methods of attaching, FSP-50-39(156)
metal cast to, FSP-50-39(156)
Refractories (*continued*)
placing of, FSP-50-39(157)
problems, FSP-50-71(181)
properties of, FSP-50-8; FSP-50-64(115)
references, FSP-50-38(140)
research by F. H. Norton, FSP-50-8(54-55)
research by M. C. Boose, FSP-50-8(53-54)
resistance to destruction, FSP-50-8(55)
service, FSP-50-38(133-134)
service and slag composition, FSP-50-81 (319-322)
service conditions in furnaces burning powdered Illinois coal with long-flame burners, FSP-50-38
service test of, FSP-50-64(118)
slag from, carried by gas velocity, FSP-50-64 (123)
slag penetration, FSP-50-81(321)
slagged away, FSP-50-38(133)
slagging of, FSP-50-8(55-56); FSP-50-64 (116, 118, 123)
spalling and fluxing of, FSP-50-8(56-57); FSP-50-64(124); FSP-50-72(187-188); FSP-50-81(319, 321-322)
special shapes, FSP-50-64(121-122)
specific heats of, FSP-50-8(54)
strength of, FSP-50-8(52-53)
strength hot and cold, FSP-50-64(117-118)
surface combustion in, FSP-50-64(119)
temperature deformation of, FSP-50-64(120)
temperature gradients, FSP-50-64(117)
temperature measurement, FSP-50-38(125)
temperatures, FSP-50-38(131-132,135); FSP-50-78(255-256); FSP-50-81(318-319)
utility chart, FSP-50-8(53)
of cement, FSP-50-8(53)
Refractory-coated water wall, FSP-50-39(149-154)
covered and bare water walls, FSP-50-39 (152)
covered furnace walls, characteristics of, FSP-50-39(156)
covered water wall affected by furnace volume, FSP-50-39(153)
covered water wall better at low ratings, FSP-50-39(155)
covered water wall, effect of varying fraction cold on, FSP-50-39(150)
covered furnace walls needed for pulverized coal, FSP-50-39(155)
faced cast-iron blocks, FSP-50-78(268)
isotherms, FSP-50-39(145, 147, 153)
lined blocks, FSP-50-39(157)
Refrigeration, iceless, RR-50-1(4)
REGAN, EDWARD E. Car retarders, a recent development in railway-yard operation, (D), RR-50-12
Regeneration in industrial furnaces, FSP-50-55 (37, 40)
Regenerative vs. reheater cycle, RR-50-8
live-steam, FSP-50-26(9); FSP-50-31(42-43)
Reheating cycle needs economizer, FSP-50-34(99)
REID, H. P. A materials-handling and transport organization (D), MH-50-8
Burning characteristics of different coals (D), FSP-50-52
Collecting the dust from chimney gases of powdered-fuel installations (D), FSP-50-59
Damage due to smoke (D), FSP-50-75
Fineness of pulverized fuel as affected by mill types (D), FSP-50-60
Present status of furnace and burner design for the use of pulverized fuel (D), FSP-50-72
Rejection in manufacture, MAN-50-16(16-17)
Remote control of railroad switches, FSP-50-68 (154)
Repair budget, MSP-50-3(25)
cost accounting, MSP-50-3(23)
order accounting, MSP-50-3(22)
standardized, MSP-50-3(24)
Research, cost of, OGP-50-9(31-32)
equipment, aerodynamic, AER-50-2(3)

Research (*continued*)
is capital investment, WDI-50-9(5)
on tropical woods before marketing them, the need of, WDI-50-9
progress, MAN-50-1(5)
to control expense, MAN-50-9(57)
Resonance, a cause of wing flutter, AER-50-10(9)
Respiratory diseases and smoke, FSP-50-24 (185-186)
Reynolds and Harrison, lubrication equations, APM-50-4(1)
REYNOLDS, M. S., and DANCKWORTT, T. B. Diesel-fuel-oil specifications (D), OGP-50-10
RICE, C. W. Present tendency of boiler-water conditioning (D), FSP-50-58
RICE, W. E. The use of fuels in tunnel kilns, FSP-50-56
The use of fuels in brick kilns, FSP-50-11
RICHARDSON, A. A. Symposium on shop-equipment maintenance (D), MSP-50-3
RICHARDSON, BAYARD EDWIN. Problems of design for mass production in the furniture industry, WDI-50-11
RICHARDSON, E. G. Aerodynamic experiments, abstracted, AER-50-4(15)
RICHARDSON, GEORGE A. Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66
The economic status of oil as a fuel for marine service, FSP-50-67
RICHARDSON, L. Car retarders, a recent development in railway-yard operation, RR-50-12
RICHARDSON, W. S. Production-control methods in the rubber industry (D), MAN-50-2
Ringelmann chart, FSP-50-22(171, 173); FSP-50-76(225); FSP-50-77(241, 248, 251-252)
RIPLEY, E. B. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
RITTER, WALTER T. Stoker advantages and disadvantages (D), FSP-50-65
Wood-burning furnaces (D), WDI-50-16B
River clamp for pipe line, PET-50-6(16)
Road roller with internal-combustion engine, FSP-50-21(165)
ROBERTS, C. J. Control of quality (D), MAN-50-7
ROBERTS, E. P. Burning characteristics of different coals (D), FSP-50-52
Damage due to smoke (D), FSP-50-75
Problems and methods in smoke-abatement work (D), FSP-50-77
ROBINSON, M. G. A method of analyzing the performance curves of centrifugal pumps (D), HYD-50-3
Measurement of flow of air and gas with nozzles (D), APM-50-3
Rockwell hardness test, MSP-50-15(1)
RODERICK, G. H. Improvements in handling methods in the woodworking industry, WDI-50-5
ROESCH, FRANK P. Railway practices in utilization and conservation of oil (D), FSP-50-68
Selection and use of fuels in locomotive practice (D), FSP-50-69
The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
Roll, rolls
characteristics in rolling mills, IS-50-2(3)
for fabricating large boilers, FSP-50-9(59)
life, IS-50-9(3-4)
preheating, IS-50-9(12)
shaped while hot, IS-50-9(6, 10)
temperature deformation of, IS-50-9(4)
Rolled metal, coating of, IS-50-2(2)
Roller mill for pulverizing coal, FSP-50-60(88, 91-92)
Rolling, cold and hot, IS-50-9(1)
continuous, more suitable for roughing, IS-50-9(6-7)
continuous sheet, most successful, IS-50-9 (5-6)
hot and cold, IS-50-2(2)
hot, problems, IS-50-9(9-10)
industry improvements and investments, IS-50-9(10-11)
industry needs mechanization, IS-50-9(2-3, 5)
light gage, IS-50-9(12-13)
-mill accuracy, IS-50-2(2)
mill, armor-plate, IS-50-2(5)
-mill capacity, IS-50-2(2); IS-50-9(12)
mill, centralized control of, IS-50-1(1-2)
mill, cluster type, safety of, IS-50-2(4-5)
mill, cold-rolling, IS-50-2(5)
mill, continuous, IS-50-9(12,13)
-mill difficulties, IS-50-2(1)
mill for tin plate, IS-50-2(2)
mill, four-high, IS-50-1(1); IS-50-2
mill, furnaces for, IS-50-9(7)
mill of the future, IS-50-9(7-9, 11-12)
mill, German, data and production, IS-50-9 (1-7)
mill, guiding strip in, IS-50-9(11)
-mill lubricants, IS-50-11(27, 28)
-mill lubricating systems, IS-50-11(26-27)
-mill lubrication, economics of, IS-50-11(26)
-mill lubrication, power saved by, IS-50-11 (26)
-mill power consumption, IS-50-2(2)
-mill, pressure due to cold rolling, IS-50-2(3)
-mill product, market for, IS-50-2(6)
-mill progress, IS-50-1(1-2)
mill, roll characteristics, IS-50-2(3)
mill, roller bearings in, IS-50-2(1, 2); IS-50-11(26, 27)
mill, testing devices, IS-50-2(1)
mill, types, IS-50-2(3-4)
mill with roller bearings, IS-50-2(4-5)
patents, IS-50-9(9, 10, 12)
sheet, IS-50-9
stock progress, RR-50-1(2)
stock, standardization of, RR-50-1(2)
wide material, IS-50-2(1)
wide strip, successful, IS-50-9(11)
with heating between passes, IS-50-9(6-7)
ROSENBLATT, M. C. Coordinating wage incentives and production control (D), MAN-50-3
Rosin, shipping, tank car for, MH-50-4(8)
ROSS, BRUCE WALLACE. Investigation of the pulp and paper industry in the State of Washington, WDI-50-7
ROSS, CARROLL A. Automatic production of small wood parts (D), WDI-50-15
Wood-burning furnaces (D), WDI-50-16B
ROSSBY, C. G. Meteorological service for commercial airways, AER-50-13
Rotor, allowable steady and alternating stresses in, APM-50-16(78)
diameter, limit of, APM-50-16(63)
laminated rim, stresses in, APM-50-16(66-67)
large, slow-speed, APM-50-16(64-66)
plate, design and stresses, APM-50-16(63-64)
solid forged, APM-50-16(78)
stress at dovetails in, APM-50-16(67-68)
stress due to rotor teeth, APM-50-16(63)
teeth, stresses in and due to, APM-50-16(63)
ROUGHLEY, HUGH W. Inspection methods and quality control in the manufacture of aircraft-engine parts, MSP-50-15
Rowett, vibration experiments, APM-50-8(25, 54)
ROWE, GORDON D. Problems and methods in smoke-abatement work (D), FSP-50-77
ROWLEY, FRANK B. Investigation of insulated walls, APM-50-15
Rubber bearing in hydraulic machinery, HYD-50-1(3)
industry, production-control methods in, MAN-50-2
Rubber (*continued*)
products, handling, MH-50-4(5)
seal in hydraulic machinery, HYD-50-1(3)
RUCKMAN, JOHN H. The burning of liquid fuel (D), FSP-50-13
Rug tests of vacuum cleaner, MAN-50-7(49)
RUNGE, R. F. Recent developments in the application of anti-friction bearings to machine tools, MSP-50-8
RUNGE, WALTER. The K.S.G. process of low-temperature carbonization, FSP-50-28
RUSSELL, EDWARD A. Heating and ventilating of passenger cars, RR-50-6
Rust, molecular explanation of, IS-50-8(37)
Ruths steam accumulator, FSP-50-33
RYAN, W. F. Modernization of the industrial power plant (D), FSP-50-41

S

Sabathe cycle, AER-50-17(67)
SACKETT, R. L. Computation of the tail-water depth of the hydraulic jump in sloping flumes (D), HYD-50-5
Safety, MAN-50-1(4)
and materials handling, MH-50-8(17)
at marine terminals, MH-50-11(7)
factor, APM-50-12
gives efficiency, MAN-50-3(17)
in airships, AER-50-4(1)
in cranes, MH-50-5(6)
in printing, PI-50-5(10)
in materials handling, MH-50-4(3)
of aircraft Diesel engine, OGP-50-1(1); OGP-50-3(7)
of hydraulic feed, MSP-50-4(49-50)
of machine tools, MSP-50-2(6, 13, 14, 15); MSP-50-3(23)
of modern furnaces, FSP-50-78(269-270)
of oil fuel, FSP-50-67(144); FSP-50-68(148)
of oil stills, PET-50-1(7)
of pulverized coal, FSP-50-70(174)
of punch press, MSP-50-2(8-9)
on railroads, RR-50-1(1)
through materials handling, MH-50-4(6)
zone in airport, AER-50-8(1)
St. Venant, air-flow research, APM-50-3(8)
Salary of engineering graduate, RR-50-2(15)
Sales and output, MAN-50-9(59)
-expense budget, MAN-50-5a(32)
-period length, MAN-50-10(68)
-quota report, MAN-50-5a(32)
-resistance, MAN-50-7(47)
SAMANS, WALTER. Progress in refining, PET-50-1
SANDERS, W. C. The motor truck and L.C.L. freight (D), RR-50-7
SANFORD, S. S. Stresses and reactions in expansion-pipe bends (D), FSP-50-49
SATTERFIELD, JOHN M. Development of the Buffalo Airport, AER-50-8
SAVAGE, H. D. The economics of coal carbonization in the U. S. (D), FSP-50-27
The K.S.G. process of low-temperature carbonization (D), FSP-50-28
The high cost of fuel saving (D), FSP-50-4
Saw, circular, research on, WDI-50-14(14)
standards, WDI-50-14(15)
SAWFORD, FRANK. Smoke-abatement methods used in Cleveland (D), FSP-50-21
SAYRE, MORTIMER F. Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
Scale removal, FSP-50-45(209)
SCARR, F. J. The motor truck and L.C.L. freight, RR-50-7
SCHAFFER, CHAS. F. The prerequisites of successful polishing (D), MSP-50-6
SCHEFFLER, F. A. The economics of coal carbonization in the United States (D), FSP-50-27

SCHELL, HORACE B. Ball-bearing machine-tool spindles (D), MSP-50-10
SCHLUETER, ROBERT. Efficiency methods and standards in German woodworking industries, WDI-50-14
SCHMIDT, W. K. Lacquer and varnish films (D), WDI-50-4
Schneider airplane trophy, race results, AER-50-1(2)
SCHWEITZER, P. H. Diesel engines for locomotive (D), OGP-50-4
Efficiencies of Otto and Diesel engines (D), OGP-50-5
Heavy-oil engines for aircraft (D), AER-50-23
Oil-spray research at Penn State, OGP-50-12
Progress in oil- and gas-power engineering, OGP-50-1
The study of oil sprays for fuel-injection engines by means of high-speed motion pictures (D), OGP-50-3
Screw machine, motor-driven, MSP-50-2(7-8)
SEABURY, GEORGE E., and MOULTROP, I. E. Some economic factors in power-station design (D), FSP-50-40
SEALY, MARIE P., and LIES, B. EUGENIA. Motion-study principles and their application in a department store, MAN-50-17A
Seaplane hull research, AER-50-2(5)
Seasonal demand, MAN-50-6(44); MAN-50-10 (66)
SELEY, C. A. The manufacture of nickel-steel plate (D), IS-50-10
SELKIRK, W. M. The manufacture of seamless tubes (D), IS-50-7
SELVIG, W. A. The clinkering of coal ash as related to laboratory fusibility determinations, FSP-50-6
Service to customer and production methods, MAN-50-16(15-16)
Sewage disposal, TEX-50-2(13-14)
SEYMOUR, L. D. Air-transport engineering, AER-50-14
SHADGEN, JOSEPH F. Automatic combustion control (D), FSP-50-14
Industrial-furnace efficiency, economic consideration (D), FSP-50-55
Stoker advantages and disadvantages (D), FSP-50-65
Shaft design to avoid critical speeds, APM-50-16 (62)
rotating, safety of, APM-50-12(21)
stiffness, APM-50-8(46-47)
SHAW, B. RUSSELL. Modern airports and airport planning, AER-50-26
Shear, maximum, theory, APM-50-16(61)
Sheet and strip, IS-50-9(1)
rolling, continuous, IS-50-1(1)
SHELLENBERGER, ROLFE. Some fundamental considerations in the design of boiler furnaces (D), FSP-50-39
SHEPARD, JR., F. J. Modern handling methods of railroad transportation (D), MH-50-13
SHEPERDSON, JOHN W. Sheet rolling (D), IS-50-9
SHERMAN, RALPH A. Boiler-furnace refractories (D), FSP-50-64
Refractories service conditions in furnaces burning powdered Illinois coal with long-flame burners, FSP-50-38
TAYLOR, EDMUND, and KARCH, H. S. Refractories service conditions in furnaces burning fuel-oil, FSP-50-81
SHERZER, A. F. A method of analyzing the performance curves of centrifugal pumps (D), HYD-50-3
SHINKLE, VINCENT G. The burning of liquid fuel (D), FSP-50-13
Ship design for easy cargo handling, MH-50-11(6)
dock should be designed for, MH-50-11(1)
-docking expenses, MAN-50-15(10-11)
electric trucks operated into, from dock, MH-50-11(6)
Ship (*continued*)
-freight study, MH-50-11(2-3)
-hatch size, MH-50-11(10)
loading from lighter, MH-50-11(4-5)
-model tank, AER-50-2(5)
pulverized coal for, FSP-50-66
terminal must be designed for materials handling, MH-50-11(7)
turn-around must be quicker, MH-50-11(7)
with conveyor for loading, MH-50-1(5)
with side ports, MH-50-11(6, 10)
Shipbuilding, plywood in, WDI-50-13(4)
SHIPMAN, C. C. Coordinating wage incentives and production control (D), MAN-50-8
Shop-equipment policies in representative plants, MSP-50-7
SHORT, IRA. High-speed gearing, MSP-50-16
SHORT, MAC. Discussion of Oleo gears, AER-50-3(10)
Design of commercial airplanes, AER-50-15
SHOUDY, W. A. Modernization of the industrial power plant (D), FSP-50-41
Operating data of large steam generating units (D), FSP-50-34(99)
Some factors in furnace design for high capacity (D), FSP-50-78
The Ruths steam accumulator (D), FSP-50-33
Shrink pressure in rotating disk, APM-50-10(5)
SIBOLE, B. P. Development of transportation of crude oil in 1927, PET-50-1
SIEGERIST, WALTER. Recent developments and improvements in the baffling of vertical boilers (D), FSP-50-57
SIEMS, BERNARD V. The effect of industrial wastes on boiler-feedwater problems and condenser operation, FSP-50-46
SIGMON, A. C. Organizing a smoke-abatement campaign (D), FSP-50-22
Signal, railroad, electric interlocking system for, RR-50-10
Silica, expansion of allotropic forms of, FSP-50-8 (57)
SILLCOX, L. D. High-steam pressure and condensing exhaust for locomotives (D), RR-50-8
SILVERMAN, MORTIMER. Constitution and classification of coal (D), FSP-50-51
Railway practices in utilization and conservation of oil (D), FSP-50-68
The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
Washing and preparation of coal (D), FSP-50-53
Simo chart, MAN-50-17A(23)
SIMON, A. C. Smoke-abatement methods used in Cleveland (D), FSP-50-21
Simplification, MAN-50-1(3); MH-50-1(1) progress, MSP-50-1(1)
Simultaneous motion-cycle chart or Simo chart, MAN-50-17A(23)
Sizing methods in bronzing, PI-50-6(18)
shipment of materials, MH-50-1(2, 5); MH-50-4(3, 4, 6-7); MH-50-8(18-20)
SKINNER, WILLIAM C. Smokeless and efficient firing of domestic furnaces—part II (D) FSP-50-76
SKLOVSKY, MAX. Operating costs of electric industrial trucks and tractors (D), MH-50-3
Symposium on hydraulic feeds for machine tools (D), MSP-50-4
Symposium on shop-equipment maintenance (D), MSP-50-3
Slag and ash-fusion point, FSP-50-66(139)
and carbon dioxide, FSP-50-66(141)
and refractories, FSP-50-81(319-322)
and spalling of refractories, FSP-50-81(322)
and water cooling, FSP-50-70(174)
and water screen and wall, FSP-50-70(167)
at high rating, FSP-50-66(140)
Slag (*continued*)
composition, FSP-50-38(132-133)
elimination, FSP-50-71(181-182)
from pulverized coal, FSP-50-61(99-100)
problem, FSP-50-66(140)
reduced by carborundum brick, FSP-50-66 (140)
Slagging of refractories, FSP-50-38(133)
of tubes, FSP-50-78(253-270)
of tubes related to fineness of pulverized coal, FSP-50-10(75)
Sludge, definition, FSP-50-46(219)
SMITH, E. D. Modern handling in enameling work, MH-50-10
SMITH, H. D. Washing and preparation of coal, FSP-50-53
SMITH, H. L. H. The economic field for large Diesel engines (D), OGP-50-11
SMITH, HARRY N. Selection and use of fuels in locomotive practice (D), FSP-50-69
SMITH, LOUIE E. Systems of workman payment in porcelain factories (D) MAN-50-12
SMITH, MORGAN B. Constitution and classification of coal (D), FSP-50-51
Factors governing the purchase of coal, FSP-50-7
Gluing wood in aircraft work (D), AER-50-16
Present tendency of boiler-water conditioning (D), FSP-50-58
Smoke abatement, FSP-50-52(21-22); FSP-50-75(218-221); FSP-50-76
abatement and coke, FSP-50-28(26)
abatement and janitor, FSP-50-77(251)
abatement and politics, FSP-50-77(250)
abatement and visibility, FSP-50-77(247)
abatement, appreciation of, by smoke producers, FSP-50-21(163)
abatement at altitude by larger flues, FSP-40-21(169)
abatement at locomotive terminals, FSP-50-19(154-158)
abatement by control of new building plans, FSP-50-21(164-165)
abatement by correct instruments in boiler room, FSP-50-21(166)
abatement by correctly designed chimneys, FSP-50-21(165-166)
abatement by discipline, FSP-50-19(153)
abatement by education, FSP-50-22(171-172)
abatement by overfire air injection, FSP-50-25(1)
abatement by steam air jets, FSP-50-77(241)
abatement by underfeed stoker, FSP-50-77 (246)
abatement by use of coke, FSP-50-23(182)
-abatement campaign, conduct of, FSP-50-22 (172-173)
abatement, city appropriation for, FSP-50-21(168)
-abatement conferences, FSP-50-19(156)
-abatement department and permit system, FSP-50-77(247)
-abatement difficulties with domestic user, FSP-50-77(247)
-abatement economics, FSP-50-77(245)
abatement, economy of, FSP-50-21(164)
-abatement education, FSP-50-21(166); FSP-50-77(247)
-abatement equipment, FSP-50-21(163-165)
-abatement firing charts, FSP-50-22(172)
-abatement improvements, Cleveland, 1927, FSP-50-21(165)
abatement in domestic furnace, FSP-50-23
abatement in incinerators, FSP-50-21(168)
abatement in street-paving department, FSP-50-21(167)
abatement in various small furnaces, FSP-50-77(240-243)
abatement, marine, FSP-50-21(168)
-abatement methods, FSP-50-77
-abatement methods used in Cleveland, FSP-50-21

Smoke (*continued*)
abatement needs cooperation, FSP-50-22 (170)
abatement needs engineers, FSP-50-22(170)
abatement on railroads, FSP-50-21(167-168); RR-50-1(4)
-abatement ordinances, Cleveland, FSP-50-21(163)
abatement publicity and its importance, FSP-50-22(171, 173)
abatement, railway, FSP-50-19
abatement, railway, by use of special fuel mixtures, FSP-50-19(155-156)
abatement reduces fuel losses, FSP-50-19 (157)
-abatement remedies in various furnaces, FSP-50-77(240-243)
abatement research, FSP-50-22(171)
-abatement tests need large samples, FSP-50-20(161)
-abatement tests, sugar filter for, FSP-50-20 (161)
-abatement with steam-air jets, FSP-50-21 (165-166)
and chain grate in Indiana and Illinois, FSP-50-77(251)
and health, FSP-50-24(185-186)
and ultra-violet radiation, FSP-50-24(187)
and visibility, FSP-50-75(214-215)
and weather, FSP-50-75(214-215)
bibliography, FSP-50-75(213)
causes physical and chemical deterioration, FSP-50-24(184-185)
constituents, FSP-50-75(214)
damage, FSP-50-75; FSP-50-77(249)
damage, cost of, FSP-50-75(218)
damage to vegetation, FSP-50-24(185)
density, gaging of, FSP-50-76(225-226)
due to firing cold furnace, FSP-50-23(181)
from apartments and private dwellings, FSP-50-1(2); FSP-50-77(243)
from automobiles, FSP-50-77(244-245)
from domestic stacks, FSP-50-75
from furnaces when lightly loaded, FSP-50-77(250)
from hand stoker, FSP-50-65(127)
from industrial furnaces, FSP-50-77(242-243)
from self-contained boilers, FSP-50-77(245)
from "smokeless" boilers, FSP-50-77(249)
indicator, eclipse, useful at night, FSP-50-77 (252)
inspection at night, FSP-50-77(252)
-inspection personnel, FSP-50-77(248)
-inspection report blank, FSP-50-77(239 240)
inspection with umbrascope, FSP-50-77(247)
inspector and the equipment salesman, FSP-50-77(245-246)
invisible, from pulverized coal, FSP-50-77 (251-252)
organizations cooperating, FSP-50-77(247-248)
pollution of atmosphere, FSP-50-24
producer, potential, should be tested where it is to be used, FSP-50-77(252)
sulphuric acid in, FSP-50-77(249)
survey and its importance, FSP-50-22(171, 174)
-violating equipment, FSP-50-77(240-241)
violation of hot-water heaters, FSP-50-77 (242)
visible and invisible, FSP-50-75(221)
Smokeless and efficient firing of domestic furnaces, FSP-50-23
Soda ash, definition, FSP-50-46(219)
Soda ash for water conditioning, FSP-50-58(66, 74-75)
SODERBERG, C. RICHARD. Strength of steel columns (D), APM-50-9
The theory of the dynamic vibration absorber (D), APM-50-7
Sodium aluminate solution, FSP-50-46(219)
Soil corrosion of pipe lines, PET-50-6(16-17)
SOMERS, JOHN C. Economic production quantities (D), MAN-50-10
Soot, FSP-50-52(17)
-fall measurement, FSP-50-20(159)
-fall tests, Cleveland, FSP-50-20(160); FSP-50-21(166, 167)
-fall tests, FSP-50-22(171)
from automobiles, FSP-50-77(244-245)
Specialization and quality control, MAN-50-13 (18)
in manufacture of Diesel engines, OGP-50-13
Specifications for coal, FSP-50-2(8); FSP-50-7 (47-49)
Spectrum, yardstick for color, PI-50-9(29)
Spectrometric measurement of printing-ink colors, PI-50-4(2, 4)
Speed control of hydraulic feed for machine tools MSP-50-4(35)
-frequency curves of induction motor, WDI-50-2(2)
SPELLER, FRANK N. Boiler-corrosion problems, FSP-50-46
High-pressure steam boilers (D), FSP-50-32
SPENCE, L. D. The development of machine tools from a user's viewpoint (D), MSP-50-2
SPENCER, C. G. Modernization of the industrial power plant, FSP-50-41
Some fundamental considerations in the design of boiler furnaces (D), FSP-50-39
The characteristics of modern stokers (D), FSP-50-15
The Ruths steam accumulator (D), FSP-50-33
SPENCER, F. C. The development of machine tools from a user's viewpoint, MSP-50-2
SPERRY, ELMER E. The oil engine and aeronautics (D), AER-50-17
SPICER, C. W. Control of factory overhead (D), MAN-50-9
Spindle, ball-bearing, axial and radial deflection curves, MSP-50-10(2)
ball-bearing, calculations, MSP-50-10(8)
ball-bearing, for machine tool, MSP-50-10
ball-bearing, initial load and deflection, MSP-50-10(1)
ball-bearing, rigidity, MSP-50-10(5, 7)
ball-bearing, semi-adjustable, MSP-50-10 (6-8)
ball-bearing, spring-adjusted, MSP-50-10 (3-5)
Spoilage and wage incentive, MAN-50-16(15)
Spray-photography equipment, AER-50-11 (21-22)
Sprays, oil, for fuel-injection engines, study by means of high-speed motion pictures, OGP-50-3
Springs, mechanical, A.S.M.E. research on, MSP-50-1(3-4)
Spruce tree in State of Washington, WDI-50-7(4)
SQUIER, GEORGE C. Constitution and classification of coal (D), FSP-50-51
Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66
The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
Stabrite, IS-50-4(2)
Stamping, deep, APM-50-12(16, 21)
Standard cost system, MAN-50-10(76)
methods of water analysis, FSP-50-46
Oil Company's tankers, loading of, AER-50-17(68)
time of a job, MAN-50-3(19)
time of a job, errors in, MAN-50-3(20)
time of a job guaranteed for definite period, MAN-50-3(20)
Standard (*continued*)
time payment in porcelain factory, MAN-50-12
-time system of wage payment, MAN-50-3
-time system of wage payment, defects, MAN-50-3(17-18)
Standardization, MAN-50-1(3)
of Diesel injectors, OGP-50-7(5, 6)
of nomenclature, FSP-50-46
of printing-ink colors, PI-50-4
progress, MSP-50-1(1, 3)
STANG, A. H. Compressive tests of balsa wood, WDI-50-12
STANTON, T. E. Air flow research, APM-50-3 (11)
STARK, W. E. Determination of economic value in the selection of power-plant equipment (D), FSP-50-63
Static loads upon bus bodies, WDI-50-6
pressure equations for centrifugal fan, APM-50-5(1-2, 6-7)
Stator stress due to gravity and magnetic forces, APM-50-16(69-71)
Steam accumulator, FSP-50-33(68)
accumulator advantages, FSP-50-33(79)
accumulator, automatic control of, FSP-50-33(70-72)
accumulator, automatic valves for, FSP-50-33(72-74)
accumulator, capacity of, FSP-50-33(69-70)
accumulator, complete installation, FSP-50-33(72-74)
accumulator, effect of, on boiler pressure, FSP-50-33(71, 74-76)
accumulator for fireless locomotive, FSP-50-33(80)
accumulator in industrial plant, FSP-50-41 (188, 189)
accumulator in paper mill, FSP-50-33(81)
accumulator increases useful output, FSP-50-33(81)
accumulator installation data, FSP-50-33(78)
accumulator, peak-load capacity of, FSP-50-33(82)
accumulator, principles of, FSP-50-33(82)
accumulator, Ruths, FSP-50-33
accumulator, specific applications of, FSP-50-33(75-76)
accumulator vs. hot-water storage tank, FSP-50-33(79)
boiler—see boiler
connection between railroad cars, RR-50-6 (22-23)
-consumption curves, industrial, FSP-50-33 (68-71, 75)
diluted with air, heat transfer in, PET-50-2 (19)
dry, definition, FSP-50-46(218)
equations, FSP-50-44(203)
flow charts, FSP-50-35(102-103); FSP-50-79 (291, 292, 295)
flow, high-pressure, FSP-50-30(34)
-flow measurement, FSP-50-79
generated at critical pressure, FSP-50-30(38)
-generating equipment efficiency, FSP-50-42 (195)
-generating units, large, operating data on, FSP-50-34
generation, indirect, for locomotives, RR-50-4(9-11)
generation, industrial, FSP-50-41(184-185)
generators, FSP-50-9(59); FSP-50-26(7)
high-pressure, FSP-50-25(6)
high-pressure, cycle efficiency, RR-50-8 (34, 36)
high-pressure, dry, FSP-50-32(65)
high-pressure, economics of, FSP-50-40(178)
high-pressure, expansion tables, RR-50-4 (6-8)
high-pressure, in locomotive, RR-50-4; RR-50-8
high-pressure, Mollier diagram for, FSP-50-32(61)

Steam (*continued*)
high-pressure, saves space, FSP-50-40(169)
high-pressure, work from, RR-50-4(6-8)
high-pressure and temperature, at Crawford Avenue station, FSP-50-31
high-pressure, at Edgar station, FSP-50-30
high-pressure, causes temperature problems, FSP-50-30(35)
high-pressure, data inadequate, FSP-50-30 (36)
high-pressure, economics, FSP-50-31(41-42)
high-pressure, for turbines, FSP-50-26(8-9)
high-pressure, questionable economy of, FSP-50-4(26)
higher pressures of, FSP-50-26(7); FSP-50-29
locomotive—see locomotive
pipe, arc-welded, FSP-50-47(231-232)
pipe for power transmission, FSP-50-47 (232-233)
-piping progress, FSP-50-26(8)
-plant economy compared with Diesel, OGP-50-11(62-63)
-power developments in oil industry, PET-50-1(8-9)
-power engineering, progress in, FSP-50-26
process, electric power from, FSP-50-41 (189, 191)
pressure and boiler efficiency, FSP-50-40 (166-168)
pressure and coal cost, FSP-50-40(172)
pressure and superheat in industrial plants, FSP-50-41(187)
pressure and temperature at Crawford Avenue station, FSP-50-31
pressure depends on available condensing water, FSP-50-41(190)
pressure, high, and condensing exhaust for locomotive, RR-50-8
pressure in industrial plant, FSP-50-41(190)
pressure in pulverized coal-blast furnace gas boiler, FSP-50-35(104)
pressure, most economical, FSP-50-40(164)
pressures, high, as fuel savers, FSP-50-4(23)
pressures, higher, FSP-50-29
pressures in locomotive cylinders, high, RR-50-4
reheating, FSP-50-44(206)
space in boilers, FSP-50-32(49-50)
storage capacity of water, FSP-50-33(72)
superheated, definition, FSP-50-46(219)
superheated, in gasoline plant, PET-50-1(3)
superheated, measuring of, FSP-50-79
temperature measurement, FSP-50-79(295)
turbine—see turbine
turbine—Diesel engine comparisons, OGP-50-11(57)
vs. Diesel costs, OGP-50-10(47-48)
wet, definition, FSP-50-46(219)
Steamboat inspection service and technical worth of steel, APM-50-12(17)
Steel aging of carbon and nickel, IS-50-6(13)
alloy, at high temperatures, various heat treatments, IS-50-4
alloy, for machine tools, MSP-50-5(62)
at high pressure and temperature, APM-50-12(17)
bend elongation test, APM-50-12(14, 23)
carbon compared with nickel, IS-50-6(10)
carbon, impact tests, IS-50-6(12)
cast, for locomotive frames, RR-50-1(1)
castings, nickel-chrome vs. manganese, IS-50-6(14)
centrifugal casting of, MSP-50-18(26)
chrome-nickel, for punch press crankshaft, MSP-50-2(9)
columns, strength of, APM-50-9
construction, welded fabricated, MSP-50-18 (25-26)
corrosion-resisting—see ascoloy, Allegheny metal, iron, stainless steel, stainless
derrick for oil wells, PET-50-1(2)
Steel (*continued*)
ductility of, is it important? APM-50-12(19)
endurance limit at various frequencies, RR-50-9(61)
factor of safety, APM-50-12
failure due to entrained gas, IS-50-10(23)
for aircraft, chrome-molybdenum vs. low-carbon, AER-50-1(6)
for high pressure and temperature, APM-50-12(23)
for high-pressure boiler, RR-50-1(1)
for rolls in rolling mills, IS-50-2(3)
handling, MH-50-4(8)
heat-resisting—see ascoloy, Allegheny metal, iron, stainless, steel, stainless
high-speed, for wood-working, WDI-50-1(2)
industry progress, IS-50-1
manganese, for ash-handling pump, MH-50-12(15)
manganese, for oil-well sheave, PET-50-1(2)
nickel—see also invar, nickeloy, permalloy
nickel compared with carbon, IS-50-6(10)
nickel, early uses, IS-60-6(9)
nickel, for anti-friction bearings, IS-50-6(14)
nickel, for high-pressure boiler, IS-50-6(11-12); IS-50-10(22, 23)
nickel, for railroad forgings, IS-50-6(10-11)
nickel, gas elimination from ingot of, IS-50-10(18-19)
nickel, impact tests, IS-50-6(12)
nickel, in locomotives, IS-50-6(9); IS-50-10 (23)
nickel, ingots, care in handling, IS-50-10(19)
nickel, normalizing of, IS-50-10(20)
nickel, percentage rejection, IS-50-10(22)
nickel, plate, inspection of, IS-50-10(21)
nickel, plate, machinery for making, IS-50-10(19, 20)
nickel, plate, manufacture of, IS-50-10
nickel, plate, needs careful cleaning, IS-50-10(20)
nickel, plate, shearing and testing, IS-50-10 (20, 21)
nickel, physical properties, IS-50-6(9-10)
nickel, properties compared with carbon steel, IS-50-10(17, 18)
nickel, non-magnetic, IS-50-6(13-14)
nickel, recent developments, IS-50-6
nickel, uses, IS-50-10(17)
nickel, uses, recent developments in, IS-50-6
nickel, vs. carbon steel, IS-50-10(21, 22)
nitration process of hardening, OGP-50-1(3)
nitride-hardened, OGP-50-7(5)
physical test data and technical worth, APM-50-12
properties at high temperatures by tension and expansion tests, FSP-50-50
rail, Neuves-Maisons heat treatment of, IS-50-1(2)
special alloy for cutting tools, MSP-50-18 (25-26)
stainless, IS-50-4(1)
structural, technical worth of, APM-50-12 (15-16)
technical worth of, from physical test data APM-50-12
test data needed, APM-50-12(14)
tool, for jigs and fixtures, MSP-50-12(30)
ultimate stress, limiting creep stress, and proportionality limit compared, FSP-50-50 (279)
utility measured by area reduction in tensile test, APM-50-12(20, 21)
valve, for aircraft-engine, AER-50-7(6)
various compositions of, tested at high temperatures, FSP-50-50(273)
vs. heavy castings, MH-50-1(1)
Stevenson arch dam, investigation, HYD-50-1(4)
Straight-line production of automobile, MAN-50-16
Strain gage, magnetic, APM-50-13(35)
Stream pollution, FSP-50-46(224)
Stress concentration factors, APM-50-16(62)
in commutator neck, APM-50-16(68-69, 76-77)
in dovetails, APM-50-16(76)
in plate rotor, APM-50-16(64)
in radially loaded thick ring, APM-50-16 (72-75)
in rotating disk, APM-50-10
in rotating ring, APM-50-16(62)
in spider arm, APM-50-16(74, 75-76)
torque, in large rotor, APM-50-16(65)
weight, in rotor, APM-50-16(66)
Stefan-Boltzmann law, FSP-50-3(13, 15)
Step tower for materials handling, MH-50-2(4)
Stetson, George A. Bibliography on boiler-feedwater studies, FSP-50-46
Steubing, W. C. Materials handling as an aid to production (D), MH-50-4
Stevens, John A. The Ruths steam accumulator (D), FSP-50-33
Stevenson, S. H. Systems of workman payment in porcelain factories (D), MAN-50-12
Stewart, H. O. Coordinating wage incentives and production control (D), MAN-50-8
Stiefel, R. C. The manufacture of seamless tubes, IS-50-7
and Pugh, George A. The manufacture of seamless tubes, IS-50-7
Stillman, T. B. Pulverized-coal firing of marine water-tube boilers, FSP-50-66
Stock curves, also production, MAN-50-10 (68-71)
curves for various demands, MAN-50-10 (74-75)
reserve, MAN-50-10(70-71)
Stocker, H. E. Marine terminal operation (D), MH-50-11
Stodola vibration research, APM-50-7(17)
Stoker, stokers, advantages and disadvantages, FSP-50-65
air control in FSP-50-15(118, 119, 122); FSP-50-70(173)
air distribution important, FSP-50-70(164)
air leaks in FSP-50-52(20-21)
air motors for, FSP-50-70(164, 165, 173)
air temperature for, FSP-50-15(118)
ash discharge of, FSP-50-15(118)
ash-pit loss, FSP-50-65
ash value, FSP-50-70(174)
chain-grate, FSP-50-15(118, 121); FSP-50-65(127-128)
characteristics of modern, FSP-50-15
classified as to fuel, FSP-50-65(132)
clinker, FSP-50-65
coal distribution on, FSP-50-70(163-164)
cooling, FSP-50-70(168-170)
damper, manual vs. air motored, FSP-50-70 (173)
design, FSP-50-70
development, FSP-50-70
disadvantages, FSP-50-65(131)
duplex firing, FSP-50-15(119-120)
electrohydraulic drive for, FSP-50-70(163)
experiments, FSP-50-15(121)
fired furnaces, FSP-50-25(1)
fireman must be educated to, FSP-50-65 (134)
for high evaporation, FSP-50-70(170)
for oil still, PET-50-1(6)
forced-draft traveling grate, FSP-50-65 (129)
for inferior coal, FSP-50-70(169-170, 173, 174)
for low-temperature carbonized fuel, FSP-50-70(170-171, 172)
greater capacity needed, FSP-50-65(133)
hand, FSP-50-65(127)
hand, economy and smoke of, FSP-50-65 (133)
heavy-duty, FSP-50-65(129-131)
maintaining even fuel bed on, FSP-50-65

Stoker, stokers (*continued*)
mechanical, FSP-50-15(117)
multiple-retort, FSP-50-15(117); FSP-50-65 (129-130)
multiple-retort underfeed, FSP-50-15(118, overfeed, FSP-50-15(117); FSP-50-65(127)
performance, FSP-50-15(118, 120-121)
power requirements, FSP-50-70(164-166)
precarbonized raw coal for, FSP-50-70(172)
problems, FSP-50-31(46)
relative advantages, FSP-50-52(23)
requires draft gage and regulation, FSP-50-65(131)
salesmanship, FSP-50-65(132)
siftings, FSP-50-65
size, FSP-50-65(131)
Stowe, FSP-50-52(20-21); FSP-50-65(131-132)
supplying coal to, FSP-50-70(162-164)
underfeed, FSP-50-15(117); FSP-50-65(128-129)
underfeed, for smoke abatement, FSP-50-77 (246)
underfeed, progress in, FSP-50-25(2)
STONE, M. Stress analysis in electrical rotating machinery, APM-50-16
The theory of the dynamic vibration absorber (D), APM-50-7
STONE, MASON A. Stresses and reactions in expansion pipe bends (D), FSP-50-49
Stone, building, and smoke damage, FSP-50-75 (215)
-products handling, MH-50-4(5)
STOWE, LOYD R. Boiler-furnace refractories (D), FSP-50-64
Burning characteristics of different coals (D), FSP-50-52
Development and recent design of stoker-fired equipment for steam generation (D), FSP-50-70
Stoker advantages and disadvantages (D), FSP-50-65
Storage battery, trickle charging of, RR-50-10(5)
-battery depreciation, MH-50-3(1)
charges, MAN-50-6(42); MAN-50-10(76)
Stress, stresses: concentration, APM-50-8(29, 33, 48-49)
in cycloidal propellers, AER-50-12(35-38)
in pipe bends, FSP-50-49
in wristpin, of integration, APM-50-2
-strain diagram for column, APM-50-9 (67-68)
Stroboscope, oil-spray, OGP-50-12(67)
STRUVEN, A. L. Modern handling methods of railroad transportation (D), MH-50-13
Submarine cable, permalloy, IS-50-6(13)
Sugar filter for atmospheric-pollution tests, FSP-50-20(161)
refinery operated at uniform rate requires storage space, MH-50-2(1)
refinery using steam accumulator, FSP-50-33 (75-76)
-warehouse conveying systems, MH-50-2
Sulphate of iron, FSP-50-46(219)
process of making paper, WDI-50-3(3)
Sulphur content of furnace gas, FSP-50-38(131)
Sulphuric acid in smoke and its effect, FSP-50-24 (185)
Sulzer process for coke, FSP-50-17
Sulzer process, gas used in, FSP-50-17(150)
SUMNER, ELIOT. Can accident prevention be reduced to a science? (D), RR-50-3
Diesel engine, Büchi system, OGP-50-1(3); OGP-50-8(16-18)
of oil engine, AER-50-23(47)
Superheat drop caused by bare tubes, FSP-50-39 (157)
Superheater, FSP-50-9(60)
and cross baffle, FSP-50-57(59-60)
header, FSP-50-32(54)
interstage, RR-50-8(47)
location, FSP-50-32(58)
Superheater (*continued*)
progress, FSP-50-26(7)
radiant-heat type, FSP-50-9(61)
temperatures, stresses, and heat flow in, FSP-50-32(55)
tube stresses, FSP-50-32(52-53)
types and uses, FSP-50-41(192)
Supervision reduced by group system of payment, MAN-50-3(15)
Surveying, aerial, AER-50-1(5-6)
SWANSON, H. R. Distillation and fractionation in the petroleum industry, PET-50-5
SWEETSER, FRANK L. Budgetary control (D), MAN-50-5b
SYMONS, W. E. Back pressure and cut-off adjustment for the locomotive (D), RR-50-5
The motor truck and L.C.L. freight (D), RR-50-7
Symposium on hydraulic feeds for machine tools, MSP-50-4
on shop-equipment maintenance, MSP-50-3
Systems of workman payment in porcelain factories, MAN-50-12

T

TAGGART, JAMES M. High steam pressure and condensing exhaust for locomotives, RR-50-8
TALMADGE, WALTER. The theory of the dynamic vibration absorber (D), APM-50-7
Tank car for shipping rosin, MH-50-4(8)
Tank, hydrostatic tests of, APM-50-12(23)
TANNER, H. D. The Pratt & Whitney gear-shaving process, MSP-50-17
Tar from coal, FSP-50-70(172)
from K.S.G. carbonization FSP-50-28(20, 22)
TARRANT, JOSEPH. Flow of water over a V-notch, HYD-50-8
TAYLOR, D. W. Ship propeller experiments, APM-50-8(52)
TAYLOR, EDMUND, and SHERMAN, R. A. Refractories service conditions in furnaces burning powdered Illinois coal with long-flame burners, FSP-50-38
SHERMAN, R. A., and KARCH, H. S. Refractories service conditions in furnaces fuel-burning oil, FSP-50-81
Technical training at Carnegie Institute of Technology, MAN-50-11(7)
TEGAN, G. F. A materials handling and transport organization (D), MH-50-8
Telephone service in interlocking system, RR-50-10(5)
Teletype system for railway yard, RR-50-12(25)
Temperature and heat transfer, FSP-50-45 (209)
-entropy diagram, high-pressure, RR-50-8 (34)
measurement in vacuum-pump tests, FSP-50-43(202)
TEMPLIN, R. L. Mechanical properties of aluminum casting alloys at elevated temperatures, IS-50-8
A study of tin-base bearing metals (D), MSP-50-11
BRAGLIO, C., and MARSH, K. Mechanical properties of aluminum casting alloys at elevated temperatures, IS-50-8
TENNEY, E. H. Direct-fired powdered-fuel boilers with well-type furnaces at Charles R. Huntley station (D), FSP-50-10
Progress in central-station use of pulverized coal, FSP-50-71
Some factors in furnace design for high capacity (D), FSP-50-78
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
Tensile strength compared with Brinell hardness, MSP-50-11(27)
strength compared with Brinell hardness for copper alloys, MSP-50-11(28)
Tensile (*continued*)
test, short-time vs. long-time, IS-50-8(29)
tests of ferrous metals at high temperatures, FSP-50-50
test results at high temperatures, FSP-50-50 (266, 268, 269, 270, 271-280)
Terminal, marine, accidents at, MH-50-11(7)
marine, more progressive on Pacific Coast, MH-50-11(1-2)
marine, operation of, MH-50-11
Testing machine, expansion tests at elevated temperatures, FSP-50-50(266-267, 268, 269, 270, 271-280)
machine, short-time tensile tests at elevated temperatures, FSP-50-50(264-265, 268, 269, 270, 271-280)
machine, tensile, used at elevated temperatures, IS-50-8(25, 26)
Textile mill using steam accumulator, FSP-50-33 (76-77)
Textiles handling, MH-50-4(5-6)
THACKRAY, GEORGE E. Vibration of bridges (D), RR-50-9
Therblig, MAN-50-17A and B
Thermal efficiency, RR-50-8(38-40)
Thermic syphon for locomotive, FSP-50-68(153)
Thermal conductivity of aluminum alloys, AER-50-7(4-6)
storage, FSP-50-25(6)
Thermocouple, APM-50-15(51)
for steam temperature, FSP-50-79(295-296)
for vacuum pump tests, FSP-50-43(202)
Thermometer used in air-flow measurement, APM-50-3(4-5)
THIELSCHER, H. G. Some operating data of large steam generating units (D), FSP-50-34(97)
Ruths steam accumulator (D), FSP-50-33
The economics of air-preheater applications (D), FSP-50-16
THOMPSON, C. M. Maintenance in the large industrial plant, MSP-50-14
Thin cylinder, theory of, IS-50-3(8-9)
Thinner for lacquer and varnish, WDI-50-4(1)
THORNHILL, W. H. T. The construction and protection of oil and natural-gas pipe lines, PET-50-6
Three-color printing, PI-50-9
-color process, PI-50-4(5)
THUERK, H. C. The Diesel engine and public utilities (D), OGP-50-14
Timber—see also wood
conservation, WDI-50-1(1)
in State of Washington, WDI-50-7
situation, United States, WDI-50-10(15)
situation, United States, WDI-50-10(13)
standing, United States, figures, WDI-50-7 (1-2)
waste, WDI-50-7(2)
Timbers tropical, our need for knowledge of, WDI-50-10
Time study of group work, MAN-50-17B
study on industrial trucks, MH-50-8(16)
Timekeeping, MAN-50-2(10-11)
TIMOSHENKO, S. The theory of the dynamic vibration absorber (D), APM-50-7
Vibration of bridges, RR-50-9
Tin-antimony-copper system, MSP-50-11(13)
-base bearing metals, study of, MSP-50-11
commercial, analysis, MSP-50-11(25)
TOENSFELDT, K. Collecting the dust from chimney gases of powdered-fuel installations, FSP-50-59
Tolerance determination, MAN-50-13(19)
Tool, cutting, chromium-plated, MSP-50-18 (26)
cutting, of special alloy steel, MSP-50-18 (25-26)
inspection, MAN-50-7(45-46)
investment, MAN-50-13(18)
Toolmaking, MSP-50-12(30-31)

TORBET, M. W. The theory of the dynamic vibration absorber (D), APM-50-7
Toronto station compared with Deepwater station, FSP-50-40(177)
Torsiograph, effect of own frequencies of vibration, APM-50-8(28)
Geiger, APM-50-8(27-28)
Torsional vibration—see vibration, torsional
TOTH, CHARLES J. High steam pressure and condensing exhaust for locomotives (D), RR-50-8
Track and signal indicator in interlocking system, RR-50-10(4-5)
Tractors, Diesel, OGP-50-8(13)
equipment of, MH-50-1(2)
operating costs of electric industrial trucks and, MH-50-3
Trade-expansion possibilities and plant location, MAN-50-15(9)
Traffic problems, MAN-50-1(4)
Train control, automatic, nickel steel used in, IS-50-6(13-14)
Training course in company products, MAN-50-11(3)
course on company time, MAN-50-11(4)
course, personnel selection for, MAN-50-11
course, Westinghouse, MAN-50-11(4)
minor executives in a rapidly growing organization, MAN-50-11
operating, MAN-50-11
sales, MAN-50-11
Tramrail conveyor, automatic switches for, MH-50-1(1)
equipment progress, MH-50-1(1-2)
Transatlantic flying, possibility of, AER-50-1(1)
Transformer core of nickeloy, IS-50-6(13)
Transmission, compressed air, for Diesel locomotive, OGP-50-8(15)
efficiency, RR-50-8(36, 38)
layout for locomotive, RR-50-8(43)
220,000-volt, HYD-50-1(4)
Transportational efficiency of airships, AER-50-4(2)
Transportation, magnitudes of various means of, AER-50-27(67)
progress, RR-50-7(29)
TRASK, WALTER H., JR. Ball-bearing machine-tool spindles (D), MSP-50-10
TRAVIS, C. C. Compressive tests of balsa wood (D), WDI-50-12
TRBOJEVICH, NIKOLA. The Pratt & Whitney gear-shaving process (D), MSP-50-17
TREIBER, O. D. Specialization in manufacturing Diesels, OGP-50-13
The oil engine and aeronautics (D), AER-50-17(67)
Tridymite, expansion of, FSP-50-8(57)
TRINKS, W. General heat-transfer formulas for conduction and convection (D), PET-50-2
Progress in gas-producer practice (D), FSP-50-12
The burning of liquid fuel (D), FSP-50-13
The economics of coal carbonization in the United States (D), FSP-50-27
The flow of heat through furnace hearths (D), FSP-50-37
The high cost of fuel saving, FSP-50-4
The K.S.G. process of low-temperature carbonization (D), FSP-50-28
The manufacture of seamless tubes (D), IS-50-7
Tropical timbers, our need for knowledge of, WDI-50-10
wood, lack of trade names for, WDI-50-9(7)
wood research needed, WDI-50-9
TRUAX, T. R. Gluing wood in aircraft work, AER-50-16
TRUBE, CARL E. Some economic features affecting commercial aviation, AER-50-27
Trucks, auto, with adjustable body height, MH-50-8(19)
Trucks (*continued*)
economy and condition of runways, MH-50-3(5)
economy and haul-length, MH-50-3(4)
economy and number and severity of ramps, MH-50-3(5)
electric, cost data, MH-50-3(2-3)
electric, fixed charges, MH-50-3
electric industrial, operating costs, MH-50-3
electric lift, MH-50-1(2)
electric, maintenance, MH-50-3
electric, savings possible with, MH-50-3(3)
electric vs. gasoline, MH-50-8(20)
electric vs. hand, MH-50-3(9)
electric vs. truck and trailer, MH-50-11(8, 9-10)
gasoline, MH-50-1(2)
hand lift, MH-50-1(2)
industrial, automatic coupling, MH-50-1(2)
industrial, economy of, MH-50-2(8)
industrial, rubber tires for, MH-50-8(19)
industrial, strength of, MH-50-3(8)
industrial, time study, MH-50-8(16)
industrial, versatility of, MH-50-3(8)
lift, in various industries, MH-50-4(5-6)
performance, electric, gasoline, and hand, MH-50-3(4-7)
storage-battery, for use on docks, MH-50-11
with paper roll handling crane, MH-50-1(2)
yard floor should be suited to, MH-50-3(8)
Trucks and tractors, operating costs of electric industrial, MH-50-3
T-slot standards, MSP-50-1(3)
Tube, tubes: copper, extruded, manufacture and use, MSP-50-9
expander for high pressure, FSP-50-9(60)
expanding, IS-50-7(20-21)
large, produced by expansion, IS-50-7(20-21)
mill, automatic or plug type, IS-50-7
mill, correct piercing mandrel for, IS-50-7(19)
mill, effect of billet size, IS-50-7(18-19)
mill, expanding, IS-50-7(21-22)
mill for pulverizing coal, FSP-50-60(88, 92)
mill, lap-weld, IS-50-7(22)
mill management, IS-50-7(19-20)
mill, minimizing piercing stress in, IS-50-7(19)
mill output, IS-50-7(17)
mill, piercing machine in, IS-50-7(18)
mill, piercing mandrel in, IS-50-7(20)
mill, piercing pass design, IS-50-7(19)
mill, piercing power calculations, IS-50-7(19-20, 23-24)
mill, piercing rolls in, IS-50-7(20)
mill, pilger, IS-50-7
mill, pilger vs. plug, IS-50-7(22, 23, 24)
mill, steel difficulties in, IS-50-7(18-19)
mill, various types of, IS-50-7
seamless, manufacture, IS-50-7
Tubing, large seamless, IS-50-1(1)
mill, pilger, IS-50-1(1)
TUCKERMAN, L. B. The theory of the dynamic vibration absorber (D), APM-50-7
Tunnel, forcing concrete behind, HYD-50-1(4)
kiln—see kiln
Turbidimeter, FSP-50-60(92)
Turbidity, definition, FSP-50-46(219)
Turbine, bleeder, industrial, FSP-50-41(184)
bleeding, FSP-50-26(9)
characteristic curves, FSP-50-42(194)
gearing, MSP-50-16
-generator capacity factors, FSP-50-27 (13)
governor, high-pressure, FSP-50-30(34-35)
high pressure, FSP-50-30(33)
high-pressure, capacity of, FSP-50-30(34)
hydraulic, adjustable-blade, HYD-50-1(3)
hydraulic, development, HYD-50-1(3)
hydraulic, propeller-type, HYD-50-1(3)
hydraulic, thrust and guide bearing for, HYD-50-1(3)
Turbine (*continued*)
hydraulic, views of Conowingo development HYD-50-1(2)
mercury-vapor, FSP-50-26(9)
operated at red heat, FSP-50-30(39)
1250-lb., performance, FSP-50-30(37)
progress, FSP-50-26(8-9)
Turbo rotor stresses, APM-50-16(62)
Turbulence in centrifugal form, APM-50-5(2)
TURCOTT, DAVID. Automatic production of small wood parts (D), WDI-50-15
TUTTLE, M. A. Problems and methods in smoke-abatement work (D), FSP-50-77
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
Two-fluid system, FSP-50-25(3); FSP-50-26(9); FSP-50-29(28); FSP-50-40(170)
Two-stroke-cycle oil engines, AER-50-11(19)
TYLER, L. P. Rolling-mill lubrication, IS-50-11
Typesetting machines, PI-50-5(9-10)
Typewriter adjusted to require least work, MAN-50-18(36-37)
impression, comparison of, MAN-50-18(32-33)
tested by air pressure, MAN-50-18
testing apparatus for, MAN-50-18
work required to operate machine, MAN-50-18

U

Ulmins of coal, FSP-50-51(4-5)
Ultra-violet radiation and smoke, FSP-50-24(187)
-violet rays and lacquer or varnish failure, WDI-50-4(1)
Umbrascope, FSP-50-77(247)
Unit container, RR-50-7(31)
United States Submarine S-18, vibration of, APM-50-8(25, 30-31, 54, 59)
United States Submarine T-3, vibration of, APM-50-8(25, 31-33, 36, 37, 38, 46, 50, 54, 57, 58)
Unloader for ore, MH-50-6(2)
UPDEGRAFF, W. B. Hydraulic feeds for machine tools (D), MSP-50-4(56)
UPTON, G. B. Air-flow research, APM-50-3(8)
Efficiencies of Otto and Diesel engines (D), OGP-50-5

V

Vacuum-cleaner inspection, MAN-50-7(49)
-cleaner tests, MAN-50-7(49)
Value increase during process, MAN-50-10(72)
Valve gear, hydraulic, for airplane engine, AER-50-1(2)
mechanism, oil-engine, AER-50-23(47)
VAN BRUNT, JOHN. Combustion and heat transfer (D), FSP-50-3
The characteristics of modern boilers (D), FSP-50-9
VAN DEVENTER, F. M. Determination of economic value in the selection of power-plant equipment, FSP-50-63
The economics of air-preheater applications, FSP-50-16
The high cost of fuel saving (D), FSP-50-4
Vapor system of car heating, RR-50-6(23-25)
Varnish—see also lacquer
drying is combustion phenomenon, WDI-50-4(2-3)
films, WDI-50-4
oxidation of, WDI-50-4(6)
VAN WYCK, P. S. The apprenticeship-training program of the Tri-City manufacturers (D), MAN-50-14
Vegetation and smoke damage, FSP-50-75(217-218)
damaged by smoke, FSP-50-24(185)

Veneer distinguished from plywood, WDI-50-13 (10-11)
kinds of, used in plywood, WDI-50-13(1)
Ventilation and human efficiency, MAN-50-17A (24-26)
of passenger cars, RR-50-6
Venturi coefficients, APM-50-3(12)
meter, APM-50-3(1,12)
meter, definition, FSP-50-46(218-219)
meter for oil, PET-50-1(5)
Vibration absorber, damped, APM-50-7(12-14)
absorber, damped, applied to ships, APM-50-7(14-15, 17)
absorber, damping in, APM-50-7(13-14)
absorber, dynamic, theory of, APM-50-7
absorber, electrical equivalent of, APM-50-7(13-14)
absorber equations, APM-50-7(9-11, 12
absorber, motion-limiting stops in, APM-50-7(14)
absorber, resonant amplitudes in, APM-50-7(13)
absorber without damping, APM-50-7(9-12)
and concentration of stress, APM-50-8 (29, 33, 48-49)
and endurance limit of steel, APM-50-8 (29, 48)
calculation by use of Fourier's series, APM-50-8(26)
railroad-bridge, RR-50-9
calculations, railroad bridge, RR-50-9(56-60)
cures for, APM-50-6(1); APM-50-7(9)
damping equations, APM-50-7(21-22)
due to length of electrical rotor, APM-50-16 (60)
due to variable moment of inertia, APM-50-16(58)
electrical analogy to, APM-50-7(19)
equations, APM-50-7(9, 16-17, 18)
equations and constants, APM-50-6(1-2)
equations including higher harmonics, APM-50-6(5-6)
equivalent, torsional, of connecting rod, APM-50-8(45)
equivalent, torsional, of reciprocating mass, APM-50-8(45-46)
forced, APM-50-8(26)
frequency influenced by concentrated masses, APM-50-6(5)
frequency of arc with fixed ends, APM-50-6 (4-5)
frequency of arc with hinged ends, APM-50-6(2-4)
harmonic components of, APM-50-8(26)
in gears, MSP-50-16(11-13)
in rotating machinery, APM-50-16(57)
in steam pipes, APM-50-7(21)
of buildings, APM-50-7(21)
of bridges, RR-50-9
of electrical machine frames, APM-50-11
of floor and human efficiency, MAN-50-17A (24, 26)
of machinery reduced by spring-mounting, APM-5-7(17)
of rotor due to internal friction of rotor, APM-50-16(77)
of rotor due to oil film, APM-50-16(77)
of shaft and gyroscopic forces, APM-50-16 (59)
of ships due to turbines, equations, APM-50-7(19-20)
order of, APM-50-8(26)
Rayleigh's method, APM-50-16(57, 71)
research, APM-50-7(17)
resonance curves, APM-50-8(31, 33)
resonator, MSP-50-16(11, 13)
steady-state, APM-50-7(16)
stresses in Diesel engine, APM-50-8(33-36, 37, 38)
tests at Stanford Univ., APM-50-7(18)
torsional, absence of visible symptoms of, AER-50-4(15)
Vibration (*continued*)
torsional, and gravity forces, APM-50-8(51)
torsional, causes clutch hammer, APM-50-8 (35)
torsional, critical speed of, AER-50-4(16); APM-50-8(27)
torsional, damped, APM-50-8(45-48)
torsional, damped by loose parts, APM-50-8 (34)
torsional, damping forces, APM-50-8(52-54)
torsional, damping of unsatisfactory, AER-50-4(16)
torsional, elimination of excessive, APM-50-8 (58-59)
torsional, endurance limit less than one-tenth of ultimate strength, APM-50-8 (49)
torsional, equations, APM-50-8(36,37-45)
torsional, forces stimulating, APM-50-8 (26-27)
torsional in Diesel engine, APM-50-8; APM-50-14
torsional, maximum amplitude of, APM-50-8(56-57)
torsional, measured by Geiger torsiograph, APM-50-8(27-28)
torsional, moments and stresses due to, APM-50-8(42)
torsional, neglect of mass of shaft in calculation of, AER-50-4(16)
torsional, of crankshaft, APM-50-8(46)
torsional, of Diesel engine affected by firing order, APM-50-8(31)
torsional, of Diesel engines, mathematical symbols, APM-50-8(59-61)
torsional, of heavy rim with flexible spokes, APM-50-8(96)
torsional, of irregular shafts, APM-50-8 (36-61)
torsional, of propeller, APM-50-8(46)
torsional, resonance curves, APM-50-8(57)
torsional, solution of equations, APM-50-8 (54-58)
torsional, stiffness of parts in, APM-50-8 (46-48)
torsional, stimulating impulses, APM-50-8 (49-52)
torsional, synchronous, APM-50-8(41)
torsional, synchronous amplitude of, APM-50-8(57)
torsional, types of, APM-50-8(26)
of aircraft engines, AER-50-4(15)
Viscosity of lubricants, APM-50-4(1, 2-5)
Vogt, Robert F. The theory of the dynamic vibration absorber (D), APM-50-7
Volatile matter in coal, FSP-50-51(6)
Voltage regulation by Meyer governor in paper mill, PI-50-2(11, 16)
regulator, vibrating, OGP-50-11(61)
Vortices, cause of wing flutter, AER-50-10(14-15)

W

"Waco" biplane data, AER-50-1(2)
Wadleigh, F. R. Factors governing the purchase of coal (D), FSP-50-7
The need for coal research, FSP-50-62
Wadman, R. W. The Diesel engine and public utilities (D), OGP-50-14
Wage, wages: group system, MAN-50-3(14-15)
group-system, defects, MAN-50-3(19)
incentive, MAN-50-2(11); MAN-50-5b(37); MAN-50-7(47-51)
of direct and indirect labor, MAN-50-8
of non-productive workers, MAN-50-3(14, 15-16)
payment, good and poor jobs, MAN-50-12 (13)
payment, group bonus system, MAN-50-12 (13)
Wage (*continued*)
payment, motor-car company, MAN-50-16
payment, no spoilage bonus, MAN-50-12 (11-12)
payment, quality incentive, MAN-50-12 (12-13)
payment, standard-time system, MAN-50-3
Wagenseil, E. W. The use of pulverized coal in basic open-hearth furnaces (D), FSP-50-36; IS-50-5
Wager, C. E. Budgetary control (D), MAN-50-5b
Wahl, A. M. Stresses and reactions in expansion pipe bends, FSP-50-49
Walker, W. J. Data on oil engines, AER-50-11(18)
Walker, W. L. Control of quality (D), MAN-50-7
Wall, air infiltration through, APM-50-15(55)
insulated, tests of, APM-50-15
types requiring insulation, APM-50-15(49)
Wallace, George W. Progress toward direct firing of boilers with producer gas (D), FSP-50-54
Wallace, J. D. Efficiency methods and standards in German woodworking industries (D), WDI-50-14
Wallace, L. W. Locomotive sparks, RR-50-13
Wantzel, air-flow research, APM-50-3(8)
Ward, J. T. Progress in fuel utilization in 1927, FSP-50-25
Ward Leonard field control, MH-50-6(1)
Ward, Roswell H. The Diesel engine and public utilities, OGP-50-14
Warner, J. R. Smokeless and efficient firing of domestic furnaces (D), FSP-50-23
Warner, W. L. Arc-welded pipe lines, FSP-50-47
Evaluation of the technical worth of a steel from physical test data (D), APM-50-12
Warren, G. B. Air-flow research, APM-50-3(8)
Warterfield, Floyd E., Jr. One example of centrifugal pumps for petroleum transportation, PET-50-7
Waste—see industrial waste
disposal, cost of, TEX-50-2(13-14)
elimination, MAN-50-1(6)
elimination in paper making, WDI-50-3 (3-6)
elimination in wood-working, WDI-50-1(1)
heat utilization, Diesel, OGP-50-14(74)
industrial, into sewer, TEX-50-2(14)
in industry, Hoover report, PI-50-3(21)
investigation literature, FSP-50-46(224-225)
reduction needed in wood industry, WDI-50-10(15)
Water analysis, standard methods, FSP-50-46 (225-226)
carbon dioxide in, tests for, FSP-50-46(226)
condensing compared with process, TEX-50-2(14)
conditioning defined, FSP-50-58(70)
conditioning purposes, FSP-50-58(70)
-cooled wall to prevent furnace-lining destruction, FSP-50-40(159)
cost, TEX-50-2(11)
critical depth, HYD-50-5(3)
critical velocity, HYD-50-5(3)
flow, high-pressure boiler, FSP-50-30(34)
flow over V-notch tests and calculations, HYD-50-8
flow over V-notch, general conditions needed, HYD-50-8(27)
for condensing, TEX-50-2(12)
for manufacture, TEX-50-2(9-10)
from river, TEX-50-2(10)
hammer in penstock, IS-50-3(8)
-hammer theory, HYD-50-1(4)
in ground affects furnace hearth heat flow, FSP-50-37(120)
in textile mills, value of, for purposes other than water power, TEX-50-2

Water (*continued*)
industrial uses of, TEX-50-2(9)
industrial, value of, TEX-50-2(9)
intake, Johnson-Wahlmann, HYD-50-1(3)
make up, from evaporators, FSP-50-45
obtained from water power companies, TEX-50-2(10)
oxygen in, tests for, FSP-50-46(225)
pollution, TEX-50-2(10)
pollution at Passaic, TEX-50-2(14)
power—see also hydro power
-power conservation by pulp-grinder control, PI-50-2(16)
power in Washington State, WDI-50-7(4-5)
power, value of, TEX-50-2(9)
purchased from city, TEX-50-2(10-11)
rate case, Indianapolis, HYD-50-1(1)
rate, double-pressure locomotive, RR-50-4(9)
rate, locomotive, RR-50-4(10-11)
sampling, FSP-50-46(225, 229)
steam-storage capacity of, FSP-50-33(72)
storage with Johnson needle valve, HYD-50-1(4)
table, definition, FSP-50-46(219)
table, Martin, FSP-50-68(153, 154)
temperature, Brunot Island, Ohio River, FSP-50-40(162)
treatment, definition, FSP-50-46(219)
treatment in gasoline plant, PET-50-1(3-4)
value when filtering is not required, TEX-50-2(11)
value when pumping is not required, TEX-50-2(11)
wall furnace—see furnace; also boiler
-wall header, FSP-50-32(54)
wall, refractory-coated, FSP-50-39(149-154)
wall with bare tubes causes heat loss, FSP-50-39(157)
wall with recessed tubes, FSP-50-39(157)
walls, use of, FSP-50-9(60)
well, TEX-50-2(9, 10)
WATERBURY, B. H. Control of quality (D), MAN-50-7
WATERS, E. O. The theory of the dynamic vibration absorber (D), APM-50-7
Watersmoking of brick, FSP-50-11(81)
Water-wheel bearing bracket, stress in, APM-50-16(68)
wheel, Meyer governor for, PI-50-2(9-10)
WEAN, R. J. Sheet rolling (D), IS-50-9
Weather and smoke, FSP-50-75(214-215)
conducive to fires, RR-50-13(34-35)
observations, ice formation, AER-50-13(52)
observations in Europe, AER-50-13(50, 52)
stations, economy of net of, AER-50-13(50)
stations, need for dense net of, AER-50-13(49)
stations in California, AER-50-13(51-52)
WEAVER, J. R. Maintenance of shop equipment, MSP-50-3
Some practices in the use of machine tools in the electrical industry, MSP-50-18
WEBB, J. B. Modern handling in enameling work (D), MH-50-10
WEBSTER, J. E. Shop-equipment maintenance (D), MSP-50-3(26)
WEBSTER, W. R. A study of tin-base bearing metals (D), MSP-50-11
WECKSTEIN, S. M. Rolling-mill lubrication (D), IS-50-11
WEEKS, G. L., JR. Applications of balsa wood in aircraft, AER-50-28
WEEKS, WALTER S., and LETCHWORTH, PIERRE E. The reciprocating dry-vacuum pump, FSP-50-43
WEGMAN, J. G. Coordinating wage incentives and production control (D), MAN-50-3
Weir, definition, FSP-50-46(219)
WEISE, O. H. Diesel-fuel-oil specifications (D), OGP-50-10
WELCH, C. S. Engineering characteristics of plywood (D), WDI-50-13
Weld behavior at high pressure and temperature, FSP-50-48(240)
of coupled piping, FSP-50-48(236)
nozzle, preparation for, FSP-50-48(235)
relative strengths of, FSP-50-48(239)
shop, FSP-50-48(235-236)
sleeve, FSP-50-48(236)
temperature stresses in, FSP-50-48(238-239)
tests, FSP-50-48(238-239)
types, FSP-50-48(237-238)
Welded fabricated steel, MSP-50-18(25-26)
fillets, FSP-50-48(239)
joint, endurance strength of, APM-50-12(18, 22)
joint, small ductility of, APM-50-12(20)
joint strength and fatigue, APM-50-12(18)
joint, technical worth of, APM-50-12(14-23)
oil stills, PET-50-1(7)
parts, MSP-50-1(1)
Welders, instruction of, FSP-50-48(239-240)
Welding, arc—see arc welding
code desirable, APM-50-12(22)
electric, in hydro-power machinery, HYD-50-1(3)
fixtures, MSP-50-12(30)
joints in pipe line, PET-50-6(14)
needs uniform workmanship, APM-50-12(20)
of power-plant piping, FSP-50-48
preparation of materials for, FSP-50-47(237-239)
vs. riveting, MH-50-1(1)
Well types, definition, FSP-50-46(219)
WESTERGAARD, H. B., and OSGOOD, WILLIAM R. Strength of steel columns, APM-50-9
Western Electric Company needs multiplicity of parts, MSP-50-2(6)
needs variety of apparatus, MSP-50-12(29)
Westinghouse bearing investigation, APM-50-1(1)
WHARTON, J. B. The manufacture of seamless tubes (D), IS-50-7
WHEATON, WILLIAM E. The control of quality in a manufactured product (D), MAN-50-13
WHEELER, B. Stresses in the drive system of three-cylinder locomotives (D), APM-50-13
WHINERY, G. A., and WHINERY, I. B. Automatic production of small wood parts, WDI-50-15
WHINERY, I. B. Wood-burning furnaces (D), WDI-50-16B
WHITE, A. E. High-pressure steam at Edgar station (D), FSP-50-30
and CLARK, C. L. Properties of ferrous metals at elevated temperatures as determined by short-time tensile and expansion tests, FSP-50-50
WHITE, WILLIAM BRAID. Engineering characteristics of plywood (D), WDI-50-13
WHITE, W. M. A method of analyzing the performance curves of centrifugal pumps (D), HYD-50-3
WHITLOCK, ELLIOTT H. Economics of dry-quenching coke by the Sulzer process (D), FSP-50-17
Railway-smoke abatement (D), FSP-50-19
Smoke-abatement methods used in Cleveland, FSP-50-21
The measurement of atmospheric pollution, visible and invisible (D), FSP-50-20
WILKIN, JOHN T. The economics of coal carbonization in the United States (D), FSP-50-27
WILLIAMS, ARTHUR. Training minor executives in a rapidly growing organization (D), MAN-50-11
WILSON, E. E. The oil engine and aeronautics, AER-50-17
WILSON, H. W. Modernization of the industrial power plant (D), FSP-50-41
Wind, available energy in, AER-50-6(7-16)
chart, Cleveland, FSP-50-21(165)
effect on smoke of, FSP-50-21(166)
energy, available, AER-50-6(15)
energy content of typical year, AER-50-6(8-10)
energy curves, AER-50-6(10-11)
flow, effect of obstructions on, AER-50-6(15)
forces, precision balances for, AER-50-6(7)
frequency curves, AER-50-6(11)
records, United States weather bureau, AER-50-6(7-8)
tunnel, all-wire suspension balance for, AER-50-2(3)
-tunnel at McCook field, AER-50-6(6)
tunnels at M.I.T., data and pictures, AER-50-2(3)
tunnel at Stanford University, data and sketch, AER-50-2(4)
tunnel, drag balance for, AER-50-2(6)
tunnel for heat-transfer tests, AER-50-2(4)
tunnel propeller tests, AER-50-2(3-4)
tunnel test of power model with cycloidal propellers, AER-50-12(45)
tunnel views, Stanford University, AER-50-2(5)
tunnel, wire balance for, AER-50-2(5)
tunnels at New York University, AER-50-2(1-2)
tunnels at University of Michigan, AER-50-2(6)
velocities, commercial practicability of low, in windmills, AER-50-6(15)
velocities of typical year, AER-50-6(8-10)
velocity, determination of laboratory equivalent, AER-50-6(13-14)
velocity fluctuations, curves, AER-50-6(14)
velocity gradient, AER-50-6(15)
velocity range, choice of, AER-50-6(12)
velocity range, choice of, based on calmest month, AER-50-6(10-11)
velocity tables and charts, AER-50-6(8-10)
velocity test instruments, AER-50-6(13, 14-15)
Windmill, windmills
aerodynamic analysis of, AER-50-6(2)
air flow through, AER-50-6(3)
airfoil coefficients applicable to, AER-50-6(4-5)
analysis, Drzwiecki theory, AER-50-6(2)
blades, angles, area, and contours, AER-50-6(3)
design, AER-50-6(1-16)
design, formulas and constants for, AER-50-6(2)
energy-drop in, AER-50-6(7)
Windmills for low-wind velocities, AER-50-6(15)
generator output, AER-50-6(12)
model and law of dynamic similarity, AER-50-6(5)
model ball-bearing dynamometer, AER-50-6(6)
model test apparatus, AER-50-6(5-6)
model tests, AER-50-6(5)
model torque dynamometer, AER-50-6(5)
model with adjustable blades, AER-50-6(5)
new and old types of, AER-50-6(1)
power of types of, AER-50-6(7)
propeller-type, AER-50-6(2)
pumping compared with electric generators, AER-50-6(1-2)
regulation, AER-50-6(7)
resistance, AER-50-6(3-4)
starting torque, AER-50-6(3)
tests at University of Nebraska, AER-50-6(15)
theory, AER-50-6(1)
torque in, AER-50-6(2)
utilization of low-wind velocities, AER-50-6(10-11)
wind-tunnel tests of, AER-50-6(1)

Wing—see airplane wing
WINHOLT, E. Obtaining the maximum fuel value from wood waste, WDI-50-16A
Winkler oxygen in water test, FSP-50-46(225)
WINKLESS, C. T. The relative value in locomotive service of different sizes of the same coals (D), FSP-50-73
WINSLOW, WILLARD. The need of research on tropical woods before marketing them (D), WDI-50-9
WITT, J. C. The preparation of coal with special reference to quality (D), FSP-50-18
WOHLENBERG, W. J. Some factors in furnace design for high capacity (D), FSP-50-78
The economics of air-preheater applications (D), FSP-50-16
and BROOKS, F. W. Some fundamental considerations in the design of boiler furnaces, FSP-50-39
WOOD, B. F. Some economic factors in power-station design (D), FSP-50-40
Wood—see also plywood; lumber; timber
balsa, as vibration insulator, WDI-50-12 (26, 27)
balsa, combined with metal into panels, AER-50-28(76)
balsa, compression tests, WDI-50-12
balsa, for dry-ice boxes, AER-50-28(76)
balsa, for insulation, AER-50-28(75-76); WDI-50-12(26)
balsa, moisture content, WDI-50-12(27)
balsa, paraffin impregnated, AER-50-28(75)
balsa, physical properties, WDI-50-12
balsa, will not hold nails, screws, etc., AER-50-28(76)
balsa, uses in aircraft, AER-50-28
catalpa, too small, WDI-50-10(19)
domestic vs. tropical, WDI-50-10(19)
finish, WDI-50-1(2)
finish, failure in water stain, WDI-50-5(6)
fire-resistant processes, WDI-50-9(6)
for brick kiln, FSP-50-11(93)
-handling equipment, cost of, WDI-50-5(6)
industry needs waste reduction, WDI-50-10 (15)
industry overcapitalized, WDI-50-10(16)
knob machine, WDI-50-15(18)
knob tapping machine, WDI-50-15(17-18)
marketing of new types, WDI-50-9(10)
native, improved utilization of, WDI-50-10 (17-18)
of same tree varies, WDI-50-9(10)
parts, automatic production of, WDI-50-15 (15, 17, 19-20)
preparation loss in paper making, WDI-50-3 (5)
properties from superficial inspection, WDI-50-9(9-10)
pulp—see pulp
refuse burning, conditions for efficient, WDI-50-16B(33)
rosette machine, WDI-50-15(18-19)
soft, can always be grown in U. S., WDI-50-10(18)
species in State of Washington for pulping, WDI-50-7(3-4)
Wood (*continued*)
stained, handling methods, WDI-50-5(4-5)
tests, WDI-50-9(5-6)
tropical, desirability of introduction, WDI-50-10(14-15)
tropical, disadvantages, WDI-50-9(7)
tropical, economics, WDI-50-9(9)
tropical, identification and classification, WDI-50-10(13-14)
tropical, marketing problems, WDI-50-10 (16-17)
tropical, research, WDI-50-10(18-19)
tropical, sizes available, WDI-50-9(8)
tropical, utilization difficulties, WDI-50-9 (8)
shrinking and swelling, WDI-50-9(6)
standard grades and sizes, WDI-50-1(2)
substitutes, WDI-50-10(17, 19)
utility tests, WDI-50-9(9)
waste, blower system for, WDI-50-5(4)
waste—coal equivalent, WDI-50-16B(28, 29, 35-36)
-waste composition, WDI-50-16B(29)
-waste data, WDI-50-16A(25)
-waste disposal, WDI-50-5(2-4)
-waste, excessive flue-gas temperature with, WDI-50-16B(27)
waste, gas volume from, WDI-50-16B (29-30)
waste heating value, WDI-50-16B(29)
waste, incomplete combustion of, WDI-50-16B(27)
waste, maximum fuel value from, WDI-50-16A and B
Wooden-brush-handle machine, WDI-50-15(20-21)
WOODRUFF, G. C. Modern handling methods of railroad transportation, MH-50-13
Woodworking, American vs. European, WDI-50-14(16)
compressed air for, WDI-50-1(1)
electric transfer car in, WDI-50-5(1)
frequency changer for, WDI-50-15(21)
German, efficiency, WDI-50-14
German, standardization, WDI-50-14
high-speed steels for, WDI-50-1(2)
individual drive for each cutter and feed, WDI-50-2(1)
industry, improvements in handling methods in the, WDI-50-5
kiln served by traveling crane, WDI-50-5 (1-2)
machine for lumber handling, WDI-50-5(6)
machinery, electric motors built in, WDI-50-1(1)
machinery financial data, WDI-50-15(21)
machinery, frequency changer for, WDI-50-1
machinery progress, WDI-50-1(1-2)
machines, increasing the production of, by use of direct-connected alternating-current motors, WDI-50-2
materials handling in, WDI-50-5
plant, conveyors in, WDI-50-5(2-5)
plant, electric lift truck in, WDI-50-5(2-3)
plant, elevators in, WDI-50-5(2-3)
plant, monorail carrier in, WDI-50-5(2-3)
Woodworking (*continued*)
power saved by electric drive, WDI-50-2(4)
production increased by direct-connected alternate-current motors, WDI-50-2
properties test, WDI-50-9(9)
research, WDI-50-1(1)
terminology, German, WDI-50-14(15)
WORK, LINCOLN T. Fineness of pulverized fuel as affected by mill types, FSP-50-60
Present status of furnace and burner design for use of pulverized fuel (D), FSP-50-72
Pulverized-coal firing of marine water-tube boilers (D), FSP-50-66
Unit system of coal pulverizers for the generation of steam (D), FSP-50-61
Work dispatching, MAN-50-2(10)
WORKER, J. G. Some operating data of large steam generating units (D), FSP-50-34
and BENNETT, JOSEPH S. Development and recent design of stoker-fired equipment for steam generation, FSP-50-70
Worker, interests of, guarded, MAN-50-2(10)
Worm gear, Hindley, MSP-50-16(12)
wheel, master, for gear hobber, MSP-50-16 (10-12)
WRIGHT, ROY V. Locomotive and freight-car utilization (D), RR-50-11
Wright whirlwind airplane engine, AER-50-1(1)
Wristpin, dimension data of, APM-50-2(9-11)
new type, APM-50-2(1)
stress and shear in, APM-50-2(13-16)
Wrought-brass mill, production control in a, MAN-50-4
-iron industry needs mechanization, IS-50-9 (5)

X

X-Ray inspection of steel castings, FSP-50-30 (40)
tests of castings, FSP-50-40(180)

Y

YOST, LLOYD. Diesel-fuel-oil specifications (D), OGP-50-10

Z

ZAENGLEIN, A. B. High-speed gearing (D), MSP-50-16
ZAHM, A. F. An introduction to the problem of wing flutter (D), AER-50-10
Zeolite, corrosion difficulties with, FSP-50-58 (67, 73-74, 75)
definitions, FSP-50-46(219)
process, FSP-50-58(66-67, 73-74, 75)
-softened water in Diesel spray-pond, OGP-50-11(61)
treatment, FSP-50-46(219-222); FSP-50-31 (44)
treatment in gasoline plant, PET-50-1(4)
Zinc and smoke damage, FSP-50-75(216)
effect on aluminum alloys, AER-50-7(3-6)